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ABSTRACT

This booklet contains five papers and reports from the Third Curriculum Research Institute of the Association for Supervision and Curriculum Development of the National Education Association (Chicago, May 3-7, 1958). The focus of the Institute was upon "Learning: An Area in Need of Study and Research"; its purpose was to draw on research findings in the fields of anthropology, psychology, and communications for the light they might throw on learning problems in school situations. Included are "Learning More about Learning: A Key to Curriculum Improvement" by Alice Miel; "Personality Theory and Its Implications for Curriculum Development" by Arthur W. Combs; "Anthropology and Learning" by Rhoda Metraux; "The Communication Revolution and Learning" by Robert E. Shafer; "Believing and Behaving: Perception and Learning" by Robert E. Bills; and a concluding section by the Institute staff discussing the ideas brought out in the study groups and suggesting ways to use the materials in the booklet as a basis for further study and research. (DD)

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Learning More About Learning

Papers and Reports from
The Third ASCD Research Institute

Edited by Alexander Frazier
Chairman of the Institute Staff

ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT
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1201 Sixteenth Street, N.W., Washington 6, D. C.

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Foreword

The central purpose of the Third Curriculum Research Institute of the Association for Supervision and Curriculum Development, NEA, was to draw on research findings in related fields for whatever light they might throw on learning problems in school situations. Focus of the Institute was upon "Learning: An Area in Need of Study and Research." A special function of the Institute was to provide opportunities designed to help participants clarify their understanding of recent theories of learning; to increase their knowledge about research on learning especially in relation to helping pupils learn; and to shape up propositions for further field study and research.

This booklet makes available to Association members and others a report of some of the accomplishments of the Institute on learning held in Chicago, May 3-7, 1958. Included in the booklet are reviews of the research papers relative to learning presented by scholars in the related fields of anthropology, psychology, and communications, and contributions of staff members relative to curriculum implications and to research methodology. Also in the booklet is an introductory statement by Alice Miel, the keynote speaker of the Institute. Dr. Miel indicates "the reason why" the Institute was held, referring especially to the role of research on learning in curriculum improvement.

A concluding section in the booklet gives high lights of the ideas discussed and plans proposed in the study groups relative to the implications of research about learning and the school curriculum. Suggestions are made on ways to use the material in the booklet as a basis for further study and research. Also included in this section is help on research methodology.

As a member of the Institute staff, may I express the hope that the reader will find this booklet useful in working with groups on problems based on or related to learning. I know that the other members of the Institute staff, whose names follow, would join me in expressing this

hope: William M. Alexander, George Peabody College for Teachers; Arthur W. Combs, University of Florida; Robert S. Fleming, New York University; Alice Miel, Teachers College, Columbia University; Rodney Tillman of the Association; and Alexander Frazier, Ohio State University, who served as chairman of the Institute staff, and as editor of this booklet.

The Association is indebted to several persons who helped to prepare this booklet. Robert R. Leeper, editor and associate secretary of the Association, edited the final manuscript and directed production of the booklet. Florence O. Skuce, editorial assistant, NEA Publications Division, guided technical production of the booklet. Ruth P. Ely, editorial assistant, ASCD, secured permissions to quote.

February 1959

JANE FRANSETH
President, ASCD, 1958-59

Contents

Foreword iii
Jane Franseth, Office of Education, U. S. Department of Health, Education, and Welfare Washington, D. C.

The Reason Why . . .

Learning More About Learning: A Key to Curriculum Improvement 1
Alice Miel, Teachers College, Columbia University, New York, N. Y.

New Ideas About . . .

Personality Theory and Its Implications for Curriculum Development 5
Arthur W. Combs, University of Florida Gainesville

Anthropology and Learning 21
Rhoda Métraux, Institute for Intercultural Studies New York, N. Y.

The Communication Revolution and Learning 38
Robert E. Shafer, Wayne State University Detroit, Michigan

Believing and Behaving: Perception and Learning 55
Robert E. Bills, Alabama Polytechnic Institute Auburn

A Look Ahead . . .

How To Learn More About Learning 74
The Institute Staff

The Reason Why . . .

Learning More About Learning: A Key to Curriculum Improvement

Alice Miel

The curriculum worker, whether he be teacher or supervisor, principal or curriculum coordinator, dean or member of a curriculum committee, theorist or practitioner, has one basic responsibility—fashioning *learning opportunities*. Details of his contribution will differ, depending upon his nearness to the classroom; but, no matter what his status, the curriculum worker finds himself taking part in ordering and reordering four basic elements out of which a learning program is created. These elements are time, space, material resources, and human resources.

Many Combinations Possible

The possible ways of combining and recombining these raw materials of the curriculum are endless. Decisions affecting the nature of the learning opportunities finally made available to given individuals are of many sorts and may be made at various times and places. Certain decisions relate to one person or a single class, others to all the students in one department or school. Still other decisions encompass an entire school system or institution of higher learning. For example, a system-wide policy may be adopted to encourage teachers to take field trips; a teacher and his class may decide to visit a telephone office one week hence; a school staff may work out a plan to make their special talents available to more than their own class group; a teacher may invite his students to help plan their work schedule; a board of education may make available a per pupil allotment for the purchase of books to be selected by each teacher with the help of his class; a college may add to its offerings sponsored travel in Europe.

The quality of the curriculum of an institution or any part of it, depends upon the particular organizations and interrelated uses of these

four elements—time, space, things, and people—arrived at by the persons responsible for fostering the learning of given human beings. How much time is to be used for what, how frequently? What is to be the order of events? How much and what kind of space is to be made available? What freedom of movement and what restrictions of movement are planned? Whose ideas, feelings and skills are to be put at the disposal of learning individuals and groups through direct human contact? In what kind of psychological climate shall human interaction take place? In what forms of symbolization are additional ideas and facilities to be made accessible to children or youth in an educational institution? Through what media are these individuals to be encouraged to manipulate, experiment, explore and express? In what ways does that most crucial figure, the teacher, help children select and judge their responses to the people, the materials, the ideas and the beliefs made available through the school program?

What are basic criteria to be applied in judging the quality of the curriculum? Perhaps one is that each arrangement of elements in a learning situation shall hold promise of fostering desirable learning for one or more of the individuals concerned. Another might be that the total array of opportunities made available shall contain the possibility of promoting the broad range of learning needed by each individual for growing into fuller membership in his society as an adequate, self-respecting person.

Continuous Use of Checkpoints

If the curriculum of any institution is to be evaluated with a view to determining where improvement may be needed, it is possible to make a critical examination at any one or all of several checkpoints. One may review the stated goals for pertinence, comprehensiveness, and clearness of direction. One may give close scrutiny to the nature of the broad scope of learning opportunities afforded, or one may focus on some aspect such as teacher behavior, choices open to learners, or variety of materials supplied. One may concentrate, also, on what the learners seem to be thinking, feeling and doing as they engage in various learning activities made possible for them; in other words, what they apparently are experiencing. Finally, one may gather evidence as to the actual learning taking place. But, in each case, learning is the reference point.

Goals can be judged only in terms of significance and inclusiveness of hoped-for learning outcomes. Learning opportunities can be judged only in terms of likelihood of promoting such learning outcomes. Learn-

ing experiences are evaluated in light of learning which apparently is taking place.

Central Role of Learning Theory

When study at any or all of the points mentioned has yielded evidence of need for improvement of the curriculum, the actual process of improvement becomes one of creating better learning opportunities. It is possible to define more precisely and usefully the goals toward which an institution's efforts are to be directed. In terms of those goals, current learning opportunities can be examined and decisions can be made as to which ones should be maintained, which ones discarded or somehow modified, and which ones added. It is possible to find or devise, assemble and use better tools for teaching-learning. It is possible to gain new understanding of children and youth growing up in a modern world. New skills in presenting information and in other ways aiding the learning process can be built by the persons requiring them.

It appears, then, that much of the basic information needed in evaluating and improving the curriculum has to do with the what and how of learning. To make wise curriculum decisions, considerable knowledge is required about children and youth *in general* and *in particular*, in terms of the social context within which they are developing and in terms of their learning in that context. Curriculum workers must be alert to shortages seen, the points where many people or certain individuals seem to stop short of the maturity they might achieve. They must be guided also by changes in process—developments which call for new dimensions of understanding and skill and human sympathy. In short, it appears that *learning more about learning* is a primary, continuing responsibility of the teacher and of all other educators with more or less direct influence on the learning opportunities being offered in any one school or college. Indeed, learning about learning *is* a key to curriculum improvement.

New Knowledge Available

Fortunately, much help is available. Specialists by the thousands are busy turning up new information about human beings and what makes them behave as they do. Social psychologists, cultural anthropologists, political scientists, experts in communication, and psychologists of many varieties—all are contributing from their areas of expertness to a general science of man. Some of their findings are reported in

the pages of this booklet, with implications for the curriculum usually showing dimly, if at all. This is to be expected, for specialists in the behavioral sciences are not responsible for detailing the meaning of their information for the curriculum, nor are they frequently competent to do so.

It is the unique and sobering responsibility of the curriculum worker to study such findings and search out their meaning for the education of a population. The person charged with some kind of curriculum responsibility must take these many materials—insights and hunches and substantial research data—and, by putting them with information known about human beings, fashion a suitable program for learning.

This is the charge to the readers of the pages which follow.

New Ideas About . . .

Personality Theory and its Implications for Curriculum Development

Arthur W. Combs

These are exciting times in the social sciences. We are beginning to find new answers to old problems and are discovering new ways of looking at man and his behavior. These discoveries have vast implications for every aspect of human life. In the field of personality theory, we have in recent years come upon some fascinating new approaches that seem to have particular pertinence for educational planning and practice.

This paper will discuss four of these ideas that appear to me to be most important.

Two Approaches to Human Problems

In common practice today, there are two great general approaches to the understanding of human behavior. Each of these frames of reference, furthermore, leads to quite different kinds of practice in dealing with human problems.

Stimulus-Response

The older of the two says this: *How people behave is a result of the forces exerted upon them.* This idea about behavior is familiar to most psychology students of the past 30 years as the "S-R" or stimulus-response approach. How people behave in this frame of reference is understood as a direct outgrowth of the stimuli to which they are subjected. That is, the individual's behavior is ascribed to the forces that are observed to be operating upon him at a particular time. If we believe, however, that a person's behavior is a result of the forces exerted upon him, then the answer to our problems of human relations must be a matter of the manipulation of the forces exerted upon people.

This idea about the causation of behavior has had a vast impact upon our society and is to be found in operation almost everywhere in our culture. Such a conception of the nature of human behavior leads to a method of dealing with human problems based upon fencing people in. It is a method familiar to any person who has lived on a farm or has ever driven the cows home from pasture. One goes down the lane from the barn to the pasture, carefully closing the gates where he does not want the cattle to go and opening those where he wants them to go, until he reaches the pasture. In the pasture, he irritates the herd in such fashion that they move forward and because the route has been carefully prepared in advance, move up the lane to the barn.

This "fencing in" approach to dealing with people is to be found everywhere in our society. We find it in advertising and selling, wherein we seek to get people to buy the "right" products. We find it also in schools, when we carefully set up the barriers to be certain that children learn the things we have decided in advance they must learn. It is the method we use in our homes, in our churches, and even in diplomatic affairs for problems concerning nation and nation.

The "fencing in" technique works fine with cattle and sheep. Unfortunately, it often breaks down in working with people because people, being smarter than cattle or sheep, are always finding gates which we forgot to lock or climbing over the fences we have so carefully erected. Indeed, when we try to use this method of dealing with people, we are often frustrated and distressed at the "uncooperative attitudes" of the people we try to deal with.

There are other interesting implications of this manipulation-of-forces method of dealing with people. For example, in order to use this method effectively, somebody must know where the people *should* go. That is, in order to set up the fences properly, the places where people should go have to be known in advance. This necessarily calls for a "great man" philosophy of dealing with people, somebody who *knows* where the people should go. Carried to its ultimate extreme, such a point of view can only end in a dictatorship.

The concept of leadership which grows out of this conception of the nature of behavior, moreover, calls for a leader who is a kind of superman skilled in the manipulation of forces to get people to behave in the ways desired by the knowing few. Stated in this way, such a view of dealing with people seems highly distasteful to those of us who are deeply concerned with democratic practices. Nevertheless, this is the method of dealing with people to be found most commonly everywhere

in our society. In spite of ourselves, whenever we find ourselves saying, "How can I make him behave? How can I get him to—" or "I told him what to do!" we are illustrating this point of view about people.

Now the difficulty with this idea is not that it is wrong. The problem is, rather, that it is partly right. It is partly true that people *do* behave in terms of the forces which are exerted upon them. The idea is not wrong, it is *partly* right! Unfortunately, partly right ideas give partly right answers and partly right answers, in return, encourage us in the vain hope that if we could but try a little harder, put forth a little more effort, or find a little better angle, we would be able to solve the problem completely. Sometimes this works but frequently, too, it may be necessary for us to find some new assumption in order to solve our fundamental problems.

Perception

So it is with this idea about behavior as a function of the forces exerted upon the individual. In the past 15 or 20 years, we have begun to discover that this idea is only partly right. People, we know now, do not behave in terms of the forces actually exerted upon them; rather, they tend to behave in terms of the way those forces seem to them.

This new conception of human behavior substitutes for the idea of behavior as a function of the stimulus, the idea that *behavior is the result of how things seem to the behaver*. That is to say, behavior is seen, not as a question of the stimuli or the forces to which the person is exposed, but rather, as the product of the perceptions existing for the individual at the moment of his behaving. Now, if it is true that behavior is a product of perception, then the methods we must adopt in dealing with people must be quite different from those in the conception we have been discussing above.

People's meanings or perceptions are not open to direct attack. Perceptions lie inside people and cannot be directly affected. This means that the ultimate control and direction of behavior lies always within the personality of the behaver himself rather than in the external forces exerted upon him.

The belief that behavior is a result of perceptions calls for a quite different approach to dealing with people. In place of the manipulation of forces and the fencing in of individuals, it calls for an emphasis upon processes. Perception cannot be changed directly, it can only be facilitated, encouraged and assisted. This calls for a method of dealing with people that emphasizes growth and development from within rather

than force and coercion from without. It requires that we learn to deal with people as we do with all other growing things.

If we wish to grow a plant, for example, what we do is to find the very best seed we can find and plant it in the very finest ground we can produce. Then we supply it with the very best growing conditions we can afford, and we get out of its way and let it grow! The perceptual view of behavior calls for a similar means of approach to human problems. It calls for methods of dealing with people dependent upon the facilitation of perception or the creation of optimum conditions for personal exploration and discovery of meaning. It emphasizes working *with* the organism rather than against it. It requires leaders who are understanding of people, skilled in the creation of helping relationships, and capable of assisting and encouraging the learner in processes of personal exploration and discovery.

Learning, in this view, becomes a problem of helping people to perceive differently. To understand the nature of learning, and to build better learning situations, we need to understand the factors affecting the processes of human perception. As we understand these factors more fully, we can learn to create situations that effectively promote perception change in those for whose learning we are responsible. Actually, as I look at modern education, it seems to me that many teachers have already come a long way in discovering how to deal with the problem of learning in this way. I believe that our modern emphases upon classroom atmosphere, activity learning, pacing of materials, group discussion methods, problem-solving approaches, and the like, are fundamentally consistent with this second view of behavior. This is not surprising, for practice often precedes our theoretical understanding of the problem. However, when we eventually arrive at new theoretical understandings, we have acquired a yardstick in terms of which we can measure old practices and can push forward to even newer practices.

So far, we have hardly scratched the surface of what this new conception of human behavior means for the processes of education. I have experimented with my own classes at the University of Florida trying to find ways of putting perceptual principles into practice, and I am continually amazed at the help such thinking has provided for improving my own teaching. There seems literally no end to the hypotheses one can explore through formal research or to the "things worth trying" one can approach through action research, once problems are looked at in terms of their meaning to the behaver.

Learning as a Problem of Personal Meaning

Education, as we have known it, has done pretty well in two of its phases. It has been quite successful in gathering information and in making information available to people. These problems we have pretty well solved. Our greatest failures are those connected with the problem of helping people to behave differently as a result of the information we have provided them. People rarely misbehave because they do not know any better and most of us know far better than we behave. We are like the old farmer who, when he was asked why he was not using modern methods replied, "Heck, I ain't farmin' now half as well as I know how!"

It is over just this point, too, that we get into difficulties with the public. Both educators and the public actually desire the same thing. We educators want young people to behave differently as a result of the educative process. When the public, however, sees young people misbehaving, they jump to the assumption that these young people have not been told. You and I, however, know better. We know that it is a rare thing for teachers to fail because of lack of knowledge of their subject.

When teachers fail, it is almost always because of the fact that they have been unable to help the young people with whom they work to translate effectively knowing into behaving. The failures of education are not failures of providing information. When we have difficulties with learning, it is because we have not been as successful as we would like in the process of translating information into behaving.

Modern perceptual psychology is helping us to see this problem of learning in a somewhat different way. Learning, we are coming to understand, is not simply a matter of motivation, repetition, presentation, stimulation, conditioning, and the like, although, of course, all of these things are part of the problem. Learning, we are coming to understand, is a problem of a total personality. It is a problem of an individual's personal discovery of meaning.

Let us give an instance to illustrate this point. At breakfast one morning, for example, I read in the paper about pulmonic stenosis. Now I have told this to you, the reader. Any effect on your behavior? Probably not! This piece of information is probably as strange to you as it was to me when I read it. It has little personal meaning and so affects our behavior very little. As isolated words whose meaning we do not know, this bit of information has little effect on us. Now, suppose I tell you that this is a disorder of the heart and describes a

narrowing or closing up of the pulmonary artery. This same piece of information now has a little more meaning to us, and we may feel vaguely uncomfortable, or we may wish, "Golly, I hope that doesn't happen to me." Let us go further; suppose I tell you that this is a disorder with which some children are born. Most readers of this booklet are teachers and are concerned with children. This same piece of information, therefore, is now a little closer to us and, as a consequence, it has a little more effect on our behavior. We pay more attention. We listen more intently. Perhaps, even, we kick this idea around in our awareness.

Let us now give this word a little more personal meaning for us. Let us suppose that you have just heard this phrase in a letter from the mother of one of the children in your class. She writes you that her child has this disorder and will need to be operated on in the near future. This same piece of information now has a much more personal bearing upon and produces a number of effects in your behavior. Perhaps you write to the mother. You certainly discuss it with other teachers. You are especially nice to this child. Because this piece of information has a more personal meaning for you, you behave much more precisely, much more certainly with respect to it. Let us go one step further now, and assume that you have just been told by your doctor that you have this disorder yourself. Now, indeed, your behavior is deeply affected, and all kinds of things may occur because of your awareness of this matter! *Any piece of information will have its effect upon behavior in the degree to which an individual discovers its personal meaning.*

To put this in more technical terms, we could say that the effect of any bit of information will depend upon its psychological distance from self. Learning thus becomes the *discovery of personal meaning.* We might think of all the information a person needs in order to make an effective adjustment to life as existing on a continuum from that which is very close to self to that which is very far away from self. The problem of learning then becomes a problem of moving information from the not-self end of this continuum to the self end.

Learning in these terms may be defined as the discovery of personal meaning. Perhaps this serves to explain why much of what people learn in school has little effect upon them. Information for which an individual perceives no personal meaning is very short-lived indeed. Remember when we learned how to do proportions and when we memorized the origin of the Missouri River?

Learning, modern psychology tells us, is a problem of the discovery of personal meaning. Teaching, then, must refer to the process of helping people discover personal meaning. Unfortunately, this is not always easy. People do not explore very personal meanings with everyone. Indeed, many people come to us in education with already existing barriers to the process of exploration. Because people have been hurt in the past, they have learned to protect themselves and their personal meanings from exploration by themselves and, above all, by other people. Nor has education always helped in this process.

In our zeal to be scientific and objective, we have sometimes taught children that personal meanings are things you leave at the schoolhouse door. Sometimes, I fear, in our desire to help people learn, we have said to the child, "Alice, I am not interested in what you think or what you believe. What are the facts?" As a consequence, we may have taught children that personal meanings have no place in the classroom, which is another way of saying that school is concerned only with things that do not matter! If learning, however, is a discovery of personal meaning, then the facts with which we must be concerned are the beliefs, feelings, understandings, convictions, doubts, fears, likes and dislikes of the pupil—those personal ways of perceiving himself and the world he lives in.

We have built much of our educational system on right answers. Indeed, we have often behaved as though making mistakes were shameful and to be avoided at all cost. If, however, learning is the exploration and discovery of meaning, mistakes will be expected, even welcomed, as an indication of the fact that exploration is occurring. An educational system which does not permit, even value, mistakes may be operating in ways that discourage the kind of learning we are speaking of here.

If learning is the exploration and discovery of personal meaning and if many of the people who come to us in the educational process already have barriers against this process of exploration, it is clear that one of the first things education must do is to break down such barriers. It means that we must find ways of creating an atmosphere in which the exploration of meaning can occur. Now, you do not help people to lower their barriers by attacking them head on. If you want to get a mouse out of a mousehole, you do not stick a broomstick down the hole and poke him. What you have to do is somehow to make things nicer outside than they are inside and then, perhaps, in time, he will come out.

Modern psychology tells us that when people are threatened, two very interesting things happen to their abilities to perceive. One, under threat, perception closes in to the object of threat. That is, when people are threatened, they are unable to see anything more than the thing which threatens them. We all have had this experience ourselves when we have been worried and unable to get our mind off a thing which worries us. Our perceptions become narrowed to the thing which disturbs and distresses us.

The second effect of threat is that it forces the individual to defend himself against the events which seem to him to be threatening. We are all familiar with this in the old saying that "Nobody ever wins an argument." The hotter the argument gets, the more everyone sticks to the position he originally began with. Obviously, these two effects of threat are antithetical to the purposes and objectives of education. We do not want people's perceptions to be narrowed nor do we want them to defend their existing perceptions! What we want in education is the freeing, expanding and changing of perception. This means that in order to facilitate the process of exploration and discovery of personal meaning, we have to find ways of eliminating threat from the situations with which we are involved.

The fact that we need to eliminate threat from learning situations does not mean, however, that we need to eliminate motivation. There is an important distinction between challenge and threat that has a bearing on this problem. Modern perceptual psychology tells us that people feel threatened when they are confronted with a situation with which they cannot cope. People feel challenged, on the other hand, when they are confronted with situations with which they feel capable of coping. Apparently, then, our problem is to find ways of challenging people without threatening them. In designing such situations, however, it is important for us to keep in mind that whether or not a person feels challenged or threatened is a question of *how it seems from his point of view*, not how it seems from the point of view of an outsider! A teacher who believes she is challenging a child could conceivably be seriously threatening him.

Education as a Process of Creating Intelligence

Another exciting idea in modern perceptual psychology is its view of the problem of intelligence. For several generations we have been accustomed to thinking of intelligence as a static kind of capacity open to little change or modification. The capacity of an individual to behave

effectively, we have learned from our previous psychology, was dependent upon three things: (a) the nature of the physical organism, (b) the length of time it had lived, and (c) the experiences to which it had been exposed.

Perceptual psychology now tells us that how a person behaves is a function of his perceptions. Effective, efficient behavior, therefore, will depend upon the nature of the individual's perceptual field. If his perceptions are extensive, rich, and highly available when he needs them, then he will be likely to behave in effective, efficient, "intelligent" ways.

This is, indeed, an interesting notion, for it means that the individual's capacity for intelligent behavior is dependent upon the state of his perceptual field. It means that human capacities are perhaps not as limited as we have been inclined to think. If human capacities for intelligent behavior are dependent on perception, then they are far more open to change than we have ever supposed. Indeed, human perceptions are so much within our capacities that we may even be able *to create* intelligence by helping people to perceive more extensively and more richly and by creating situations that make it possible for these perceptions to be available when needed.

I think this is a tremendously exciting idea with vast implications for the whole process of education. If it is true that human capacities are a function of perceptions, then what we need to understand are the factors that affect perception. In addition to the three mentioned above, there seem to be at least four more factors we can add to the list of things we know that affect perception. In addition to the physical organism, time, and opportunity, we now know that perception is deeply affected by human need, goals and values, the self concept, and the individual's freedom from threat.

Let us list these factors for a moment so that we can take a good look at them. What we have been saying is this—an individual's perceptions are dependent upon these seven factors:

1. The nature of the physical organism he possesses
2. The length of time he has lived
3. The opportunities he has had in the past to perceive
4. The operation of his current need. People perceive what they need to perceive.
5. The goals and values the individual holds. People perceive what they value.

6. The self concept. People perceive what seems to them appropriate to perceive. Men perceive like men and women perceive like women.

7. The experience of threat. Threat hinders perception.

The interesting thing to me about this list of factors affecting perception is that *all but one of these factors is open to some degree of modification and change*. While there is little that we can do about the problem of time, each of the others in this list is a factor which can be, in some degree, changed and modified. If our fundamental premise that intelligent behavior is a function of the richness, extent and availability of perceptions is accurate, then, indeed, it seems possible for us to create intelligence. We can create intelligence in the degree to which the individual's perceptual field can be modified. And this, it would appear from the list above, is much more possible than we have been led to believe.

Let me hasten to throw in a word of caution here. Although this point of view holds that the individual's capacity for intelligent behavior is a function of his perceptual field and although perceptions are open to change and modification, it should not be supposed that producing change in the perceptual field is either simple or easy. Even if it is true that a person's field of perceptions is in large measure a question of his self concept, the self concept is by no means easy to change once it has become established. A self concept which has been building up for 30 years is not to be changed in a day. Change in such a self concept may require a good many years, if it be done at all.

That perceptual psychology puts the capacity for intelligent behavior within our grasp does not mean that we can make modifications quickly, easily, or at will. It does, however, open great new vistas down which we can now only dimly peer. It means that perhaps we are not so much the victim of circumstances as we have been led to believe. It means that education may not be just the victim of the child's intelligence but the creator of intelligence. It means we teachers need not feel defeated, that there are many things we can do, even with the most limited child.

Of course, at this early stage of our thinking in this way, precisely *what* we can do is still by no means clear to us. This is not surprising for the methods people use to deal with the problems they have before them have to grow with time, and we have only begun to think that this is even possible. Who knows what methods we may be able to discover in the future? Our problem now is to get about the business of exploring these principles to their fullest extent.

Implications of the Adequate Personality

For many years, we have had a conception of human adjustment primarily based upon the "average" or "normal" individual. Maladjustment, in this frame of reference, was conceived to be any kind of deviation from the norm. Conceiving of the problem of human adjustment in this way, we were confronted with the strange anomaly that many of the most outstanding and successful people in our society could only be labeled as "abnormal" because they deviated so very far from the average!

This conception of human adjustment has been disturbing to many people for a long time. In the past 15 or 20 years, many psychologists have begun to explore a quite different way of looking at the problem. They have said, "What does it mean to be a truly self-actualizing, self-fulfilling, fully-functioning person?" and have set about trying to define what such a person would be like. If it were possible to define what the truly adequate, fully functioning personality were like, this would have tremendous implications for all aspects of education, for it is the goal of education to produce adequate, effective citizens above all else. Indeed, the definition of the truly adequate personality must necessarily set the objectives and goals of education and curriculum construction.

A number of psychologists in recent years have been concerned with this question and have attempted, in one way or another, to define the adequate personality. Among those interested in this problem have been such people as Carl Rogers, Gordon Allport, Abraham Maslow, and Erich Fromm. I have been deeply interested in this problem myself. Some workers have attempted to describe the adequate personality in terms of characteristic traits of behavior, the kinds of things such people typically do. My own interest has been to attack this problem from the question of how a truly adequate personality would see himself and the world in which he lived. As a consequence of this search, I have come to believe that the personality structure of the truly adequate personality can be described in terms of three general perceptual principles. Given these three principles in a particular personality, almost all of the traits which seem characteristic of such people seem to fall into place. Let us take a look at these principles.

1. *The truly adequate personality has an essentially positive view of self.* Modern perceptual psychology seems to indicate that the distinction between adjustment and maladjustment is very largely a function of how the individual perceives himself. People who see themselves as unliked, unwanted, unacceptable, unable, undignified, and the like.

constitute the maladjusted people of our society and fill our jails, our mental hospitals, and our institutions. These people are the frustrated people of our society, and they frustrate us. On the other hand, those people who see themselves as liked, wanted, acceptable and able, people of dignity and integrity, constitute the well adjusted people of our society. They are the people who get along well with other people and who take their proper place in the society as effective and efficient citizens.

A fundamentally positive view of self seems to give individuals a great basic strength for dealing with life. Seeing themselves in essentially positive ways seems to give adequate personalities a tremendous advantage. Because they see themselves positively, they do not have to be so defensive; and as a consequence, they are quite likely to see things more clearly than other people. They are more likely to be right. Because they feel essentially strong and secure, they can also afford to be much more generous. Like the poker player who has a large stack of chips, they can afford to invest heavily. They can afford to take chances and as a result are quite likely to be much more creative. Such a secure feeling makes it possible for them to be less frightened by what is new and different. And, of course, with a very strong feeling about one's self, there is little necessity for having to hurt others. Such people do not have to expend their energies in frantic attempts to cope with life. Because they feel essentially strong and effective, they are able to take life in stride.

Now, the way one sees himself is learned. People get their self concepts from the ways in which they have been treated by those who surround them in the process of their growing up. This means that the development of a positive view of self is open to teaching. Since people learn their view of self, it becomes possible for our educational system to be far more effective than perhaps we have ever imagined it could be.

This conception of the adequate personality and how it may be brought about also calls into question the commonly held fallacy that the way to learn to deal with failure is to have experience of failure in youth. Apparently quite the contrary is true. The best guarantee of success in dealing with life in the future seems to be a history of success to this point. As we stated earlier, people feel challenged when they are confronted by situations with which they are able to cope. People feel threatened when they are confronted by situations with which they do not feel able to cope. It would appear that our problem is how to find ways of challenging people without threatening them.

I believe we could draw an interesting analogy here with the

problem of disease. We do not advocate giving children all of the possible diseases we can while they are young so that they can be better able to deal with them in the future. Rather, we attempt to protect them from as many diseases as possible until such time as they are strong enough to withstand them. Or, through our modern processes of immunization, we give the child an injection so that he contracts a mild form of the disease in so weakened a fashion that we can be certain that he will be able to cope with it. His strength to cope with the disease is thus increased by his successful experience with it.

2. *Adequate personalities are capable of accepting themselves and others.* Adequate personalities seem to be characterized by a view of themselves which is accurate and realistic, a view of self capable of accepting new data without the necessity of being defensive. Such an ability seems to grow directly out of the positive view of self we have mentioned above. The truly adequate person is able to say, "Yes, indeed, sometimes I am not very pleasant or desirable!" He seems able to see himself objectively, accurately and realistically without the necessity of being defensive.

We know that the failure to accept one's self is a frequent characteristic of maladjustment. Some years ago, I worked on an experiment which demonstrated this fact. We had a group of sixth grade children indicate on a list of 20 statements which statements were true of them. All of these statements were somewhat unflattering but true of almost any child. We included such statements as, "Sometimes I have lied to my mother" or "Sometimes I forget to brush my teeth on purpose." In responding to these questions, the better adjusted children marked many more as true of themselves than did the maladjusted. Apparently the maladjusted children found it was necessary to defend themselves by denying that such statements applied to them.

Clearly, good adjustment demands that individuals be able to accept information. After all, we cannot deal with what we refuse to admit exists. Hence, the ability to accept any and all data from the outside world is a prime necessity if an individual is to achieve a truly well adjusted state.

Like the positive view of self mentioned previously, the achievement of self acceptance and acceptance of others is a learned kind of condition. Seeing one's self accurately and realistically is learned in the same fashion as one learns to see himself positively. This, it seems to me, has some extremely important implications for education. It means we must help children to learn to accept themselves. I suspect, how-

ever, we have not always done this. Sometimes, perhaps, we have even taught children not to accept themselves by glorifying compensation.

We have sometimes, for example, pointed out to children that Edison was deaf, Cunningham was burned very badly, Roosevelt was a cripple, Lincoln was homely, and so on, with the admonition to children to "go thou and do likewise." We have held up such people as heroes in our civilization and the net effect of such an approach to human growth and development may have been that we have too often taught children *not* to accept themselves. Indeed, sometimes we may even have taught them that the thing to do in life is to spend all of their energies upon their weakest point! This is a remarkable notion which certainly none of us would be willing to carry out in our own lives.

We know that acceptance is learned. We know also that the failure to accept life is also learned. Education has a very large stake in this aspect of the production of adequate personalities. We need to teach youngsters to accept themselves and the world in which they live. This does not mean, however, that we must teach them resignation. Resignation and acceptance are by no means the same. Acceptance does not mean an individual is defeated by life. It simply means that he is ready, willing and able to admit the evidence upon which an adjustment must be made. People who are truly acceptant are not defeated by life, but neither are they so blind as to be unable to accept those aspects of life to which they must make adjustment.

Like the positive view of self, acceptance does interesting things to adequate personalities. Because such people are acceptant, they are open to data, and as a consequence they are quite likely to have better answers to human problems. This means, as Maslow has pointed out, that such people are not only connatively but cognitively effective as well. Because such people are acceptant, they are not defensive and, as a consequence, they are quite likely to learn more. Because such people are able to accept themselves and others, they are far more likely to be able to deal with other people effectively.

3. *Adequate personalities seem to be characterized by a high degree of identification with other people.* We know that as a child comes into the world, he is a pretty egocentric individual. He is interested in little else but himself and is quite unable to identify with other people. Gradually, as he grows older, however, he begins to identify more and more closely with those people who surround him in life. At first this is likely to be his parents, then his brothers and sisters,

relatives, children in the neighborhood, and the like. So it is that each of us, as we grow older, is likely to have an ever wider and wider circle of people with whom we are able to identify. Eventually, as in the saints, this feeling of oneness and belonging with other people may extend even to all mankind. Unfortunately, most of the rest of us, not being saints, sometimes get stuck along the way. We grow up able to identify only with the white ones and not the black ones, or with the Catholics but not the Protestants, or the Americans but not the Russians, and so on.

This feeling of belonging or oneness with other people is a tremendously important factor in the development of the adequate personality. People who feel they belong are likely to be trustworthy and can be counted upon in the clinches. On the other hand, people who feel they do not belong, are likely, also, to feel little responsibility for other people. After all, if you don't belong to the club, there is no good reason for paying your dues or abiding by the rules and regulations of the membership.

Because adequate persons have an extensive feeling of identification with other people, they can be counted upon to behave in ways that will not be disastrous or destructive to their fellow men. They can be counted upon to behave in responsible and effective ways because they have a deep feeling of oneness with other people. Such people are quite likely to show a great deal more compassion and truly democratic concern for their fellow men.

A feeling of identification with other people, however, is also a matter which can be learned like the principles we have spoken of above. Whether or not one learns to identify himself with people or to separate himself from people will depend upon what kinds of experience he has had with people in the process of his growing up. One learns to identify with other people when one discovers that people are safe, helpful, trustworthy, responsible and friendly. This fact provides us with important clues and objectives for our educative process. It defines the kind of teachers and situations we need to create.

Since the fundamental objectives of education are to produce adequate, efficient, informed citizens, it seems to me these new concepts in modern perceptual psychology have truly vast implications for our whole educational structure. They set the goals and objectives for some of the kinds of things we need to be seeking in modern education. These concepts indicate that perhaps we can be far more effective than we have ever thought. In the light of these principles, it seems

to me, education can find new and more effective ways of dealing with our age-old problems. They seem to me to provide exciting new bases from which we may operate to explore and discover new methods, procedures and philosophies in curriculum development.

Anthropology and Learning / *Rhoda Metraux*

A short 10 or 12 years ago Americans were in a moderately self-congratulatory mood about the effectiveness of the American system—or systems, for we have not one but many—of education. We did not, certainly, think that we had solved all the problems nor did we overlook shortcomings and failures, for there has probably never been a time when some sense of the gap between the desirable and the attainable in education has not been present to our minds. Nevertheless, we looked at a generation of young Americans and we were pleased with what we saw.

We had come through the political and economic crises of the 1930's and the war crisis of the 1940's with, comparatively speaking, little disturbance and disruption. We had been able to mobilize ourselves for a major war and to demobilize ourselves afterwards without resort to the extremes and without the social breakdowns that we saw in certain other countries, and we attributed not a little of our success to the education young Americans had had in the preceding years. Also, at that time, we began on an unprecedented scale to send abroad American educators, technicians and experts, and we began on an unprecedented scale to make it possible for foreign students—using this word in its broadest sense—to come to the United States. One of the somewhat unexpected results of this interchange was the discovery by Americans abroad and at home that it was essential to become much more conscious not only of other cultures but also of American culture if what we were attempting to teach was to have real meaning in Pakistan or Iran or Germany and if what we had to offer here was to have meaning to the students who came so far and so hopefully to learn.

Believing that we had something valuable to offer, we also believed that we could learn to take the necessary steps along the way.

Anxieties About Adequacy of Education

Today it is a little difficult to recall this optimistic and congratulatory frame of mind. For in this past year the small clouds we had already seen on the horizon have blown up into a storm that is beating down on the educational world. On October 5, 1957, when news of the first Russian Sputnik flashed around the world, Americans reacted with extraordinary unanimity. Whatever else was wrong, whatever else had prevented Americans from being the first people to launch an earth satellite, something most definitely was wrong with American education.[1] Just as, earlier, we had attributed our success to education, so now we attributed our difficulties to education.

This was predictable, for, though our optimism turned to pessimism, our sense of the importance of education has remained constant. What happened was that this event, which we also saw as "the beginning of a new age," put into focus and enlarged our awareness of existing criticisms of, and grumblings and worries about, teaching and learning. Actually, the forms that criticism has taken, the sorts of self-berating that have gone on, the kinds of questions that are being asked, often in an accusing tone of voice, were also predictable. Our awareness of our need for scientists—for large numbers of men and women able to use scientific training at many levels of complexity; our awareness of our need for ever larger numbers of men and women skilled in precision—to meet the growing demands of automation, where good results ultimately depend upon the accuracy of the operators of the machines—all this did not suddenly overtake us on October 5, 1957.

Awareness and concern were there much earlier. The scramble of employers for graduating students in many fields, the worried assessments of teaching at the college and the high school levels, the struggles of elementary school teachers to adapt their vocabulary, which had been carefully instilled and which was related to thinking about children as individuals and to a concern for awakened interest, to a renewed expectation that children should acquire facility in basic skills in specific grades—all these were signs to those who would stop to read them. The difference now is that those who run can read them; they have become billboards on the road.

Yet there is something apparently paradoxical in all this. For on the one hand, we are perhaps the people in the world—together with

[1] Based on a preliminary analysis of American attitudes toward the launching of the Russian satellite, using materials collected in mid-October 1957.

the Chinese—who traditionally have had the greatest expectations of and have made the greatest demands upon formal education as the basis for a way of life. It is one of our fundamental beliefs that all education should be open to all those who can profit from it and, correlatively, that the available forms of education should be sufficiently diversified to include every kind of learner. One of our central images of an educational institution is that of a house with many doors, each of which opens on a road leading to a far—and perhaps a new—horizon.[2] But, on the other hand, we do not—as do traditionally minded Chinese—see education as the *only* truly honorable or even certain road to success. Indeed, we do not see it even as a necessary road to success. During World War II when, at least statistically, it could be shown that there was a direct relationship between level of education and what happened to men in the armed services in terms of selection and promotion, many of these same men thought that education was an irrelevant factor.[3] We do not automatically respect those Americans who have a higher education, nor do we as a matter of course look to them for guidance.[4] On the contrary, we have—and have long had—a well developed vocabulary of derision for intellectuals. And, despite the roles which educated men and women have played in American culture, one of the recurrent themes of American literature has been the loneliness and isolation of the intellectual. Today, even as they speak in the most glowing terms of science and scientists, young Americans are as likely as not to be repelled by the idea of learning and of living within a scientific discipline.[5]

Learning About Learning from Anthropology

So today we are faced with a practical problem, one which goes far beyond questions of curriculum or of teacher training or of student selection and guidance or even, in any limited sense, of the goals of education in our society. All these questions are part of the problem, and the immediate situation, which has roused the concern of so many

[2] From a study of attitudes of members of the American Association of University Women toward their own education. See Patricia W. Cautley, *AAUW Members Look at College Education: A Preliminary Report*, Washington, D. C.: American Association of University Women, 1949.

[3] S. A. Stouffer and others, editors. *Studies in Social Psychology in World War II*. 4 volumes. Princeton: Princeton University Press, 1949-1950.

[4] But this should be seen as part of our rejection of (a) leadership by the parent generation, as such, and (b) leadership by any specific elite group.

[5] Margaret Mead and Rhoda Métraux. "Image of the Scientist among High-School Students." *Science* 126: 384-90; 1957.

Americans, is also part of it. The fact is, of course, that we know incomparably more about teaching and learning than educators did 50 years ago, and we know a great deal more about culture than was known 50 years ago—but not nearly enough to come up with the necessary answers *yet*. It is precisely here that educators and anthropologists need to pool their resources and work together.

The association of anthropologists and educators is not a new one, even though it is probably exact to say that, at the present time, American educators are likely to be somewhat more familiar with anthropology than American anthropologists are with thinking about education. Nevertheless in the past 30 years, many of the problems which anthropologists have taken to the field have been ones which we have shared more or less consciously with educators.

So, for instance, anthropologists not only have used, in other cultures, tests that were devised by educators and clinical psychologists, but also have tried to work out ways in which such tests and our interpretations of them are culture-bound. Such studies could only be made with a high degree of awareness of the purposes of these tests as they are used in our own culture. Or anthropologists have gone to the field with questions about growth and maturation that have been of direct concern to those dealing with children in our own culture. One such study was that made by Margaret Mead in Samoa, in the early 1920's, with the purpose of throwing some light on the question of whether storm and stress is an inevitable aspect of adolescence or whether the disturbances that so often characterize our adolescents can be related to our cultural expectations and their education in our society; the Samoan material indicated that the latter is the case.[6]

Other anthropologists have often been less conscious of the relevance to our own culture of the questions they put to themselves in the field. For example, as a young anthropologist, when I set out to study patterns of authority in a hierarchically organized society in Haiti,[7] where even the interrelations among peers are determined by their common relationships to others older or stronger or more important than themselves, I did not attempt to translate my findings back into terms relevant to the American situation. Only later, when I was looking at German culture with its emphasis upon distance as a

[6] Margaret Mead. *Coming of Age in Samoa*. New York: William Morrow & Co., Inc., 1928. Reprinted as a Mentor Book. New York: New American Library of World Literature, 1949.

[7] Rhoda Métraux. *Kith and Kin, a Study of Creole Social Structure in Marbial, Haiti*. Unpublished Ph.D. Dissertation. New York: Columbia University, 1951.

teaching device and at French culture with its emphasis upon apprenticeship in which distance is systematically diminished over time as the apprentice becomes trained and individualized as a person, did I also consider our own attempts initially to diminish distance and difference between adult and child as a teaching device. Then, too, I came to realize that my interest in Haitian patterns of authority grew not only out of the Haitian material but also out of my experience of growing up as an American.

When anthropologists have systematically made the attempt to translate their findings in studies of other cultures back into terms relevant to our own, further steps have been possible. So, for instance, studies of testing instruments have led us to reassess just what it is we are testing in our own children and have enabled us to think more clearly about the individual child who is aberrant in his handling of tests in our culture or who is learning our culture as a second culture. And observations of children's growth in other cultures have led us to revise our notions of what is "natural" behavior—notions which were natural enough when we had only our own children to observe and think about and so could not well distinguish what was inborn and what had been learned, but which changed as we observed other children.[8]

So anthropologists have been specifically concerned with particular problems of growth and learning. But besides this, insofar as we are anthropologists and study other cultures, we are continually dealing with learned behavior, for, after all, when we are talking about "culture" we are talking about the learned behavior that is shared by members of a society by virtue of their being members of that society —whether by birth or adoption or immigration.

And if, as anthropologists, we are interested in the way in which the culture is handed on from one generation to another and is kept steady in the handing on—or is changed from what it was to something else instead, then unavoidably we are concerned with the whole process of learning in that culture. Sometimes one may find an approximation of a "school" in a primitive society—for instance, in the systematic training given an age group of boys or girls as part of the induction into adult life among tribes which have elaborated puberty rites or other rites marking a shift of status. Such a tribe may be one which we, from our viewpoint, regard as "very" primitive, for instance the Australian aborigines.

[8] Margaret Mead and Frances C. Macgregor. *Growth and Culture*. New York: G. P. Putnam's Sons, Inc., 1951.

But more often knowledge and skills are taught by other means—by tutoring or apprenticeship training, through the use of dreams and visions, and so on. Schools, as we understand them, are comparatively a very recent invention. This has meant that anthropologists have had to look at all aspects of life in a society, for teaching and learning, however handled, also take place in all aspects of life. As a result, out of our own experience in the field, anthropologists have had always to look beyond the single institution and to evaluate learning experience inclusively.

The Cultural Context of Learning

The necessity of thinking about the whole culture when we are considering a particular point within it is, I think, one of the general gains anthropologists have made through their studies of other cultures. But there are others that are relevant here. One of the most obvious is also one of those most easily overlooked. Studying other cultures, we have been able to compare living children with living children, living families with living families. Among animal experimenters there is a vast mythology about the time the experimental animal—the ape or rat—surprised the experimenter by finding a solution to the problem that was not foreseen when the experiment was set up in the laboratory. But when we are studying human behavior, the factors that must be taken into account are so exceedingly complex and often so exceedingly subtle that it is impossible to set up adequate controls in a laboratory situation for studying a whole person or a group of persons as a whole. With our still very limited insights into human behavior, our best hope often is to work in situations where we do not ourselves set up the controls—where we use on-going life as our "laboratory." Studying living people in this way, our observations can be both more exact and more comprehensive because, however partial our knowledge, our findings are—or can be—related to whole persons rather than to mere aspects of them. Indirectly at least, the fact that we *are* continually *working* with people as they ordinarily live and that our comparisons go back to ordinary behavior deeply reinforces our capacity to keep our ideas, based on such observations, within a living framework.

Also, since anthropology is a comparative science, the kinds of contributions which anthropologists have been able to make to our understanding of human behavior have been based not on observations made in *one* other culture—for instance, the effect of storing knowledge through immense amounts of rote learning—but on a comparison of

many cultures, like and unlike each other on a particular point. This has helped us to see our own culture—our problems and our solutions and our points of bitter disagreement in theory and practice—as one among many. So we have gained a perspective we could not otherwise easily attain. But perhaps even more important, the recognition that there are many alternative solutions to problems has affected our willingness to act more boldly, to institute change more boldly, when we have felt that the interests of children at home or in school are at stake. Our knowledge of learning in many cultures has given us an awareness both of the flexibility of the human organism and of the multiplicity of possibilities, and so feeds our optimism about the possible effectiveness of change.

These are all aspects of the anthropologist's work which are generally familiar and have been widely drawn upon in thinking about child rearing and education. But there is another aspect which, however familiar, has not been sufficiently drawn upon, and it is here that anthropologists can make a useful contribution to our understanding of the learning process and to our planning for education today.

It is almost a platitude to say that in thinking about learning it is necessary to take account of the total context. In the United States we are, on the one hand, accustomed to thinking in terms of a number of interrelated groups when we think of a child's education and, on the other hand, we feel that education should be geared to the whole child. To a degree that is astonishing to the European observer who is really given a chance to observe (which is not always the case), we have managed to bring homes and schools and many of the groups that make up a community into some sort of awareness of each other which may lead to joint action.[9]

To an astonishing degree we have trained ourselves to think in terms of a wide environment when we consider the problems of an individual child or a group of children whom we see as in some way special—foreign-born children, gifted children, delinquent children, urban or suburban children, handicapped children, and so on. That this is so becomes apparent not only when we read professional journals but also when we consider how we expect a particular kind of child to be presented in an article in a popular picture magazine—with pictures of that child in school and at home, at work and at play, with his family and friends, and even apart from teachers, parents, school-

[9] See, for instance, the complex community organization that has developed in New York City in the Morningside Heights area since the 1940's, in an effort to rehabilitate and redevelop this deteriorating area.

mates, playmates, all by himself. All these activities, all these relationships play into a child's education, and we think of education as preparing the individual for an even wider range of interest and people.

Deutero-Learning—or Learning How To Learn

Yet we do not always put these many aspects of the individual's life together and ask: What is he learning—from all of these aspects? Still less do we ask the next question: What in all these varied situations is he learning about how to learn?

Some years ago Gregory Bateson, the English anthropologist, pointed out that the learning process goes on at two levels. At the primary level the individual is learning facts or techniques or theories (or whatever), and at another level he is also learning *how to learn.*[10] This second level learning Bateson called *deutero-learning.* In fact it is something with which we are all familiar, in practice if not in theory. For instance, if we are teaching a child methods of solving arithmetic problems, when we have once clearly conveyed the method of solving one type of problem, the student is not only adept at that method but is also prepared to learn more rapidly than before how to solve a second type of problem, and so on. Similarly, when a student has learned, with good teaching, one foreign language, he is able to master a second one more rapidly than the first. (Unfortunately, one of the things we often convey in our teaching of foreign languages is how impossible they are to learn, so that a reverse effect can all too frequently be seen.) That is, while the student has been learning how to deal with one type of arithmetic problem or one new language, he has also been learning how to go about solving arithmetic problems or how to learn unknown languages. This is deutero-learning.

Deutero-learning takes place also as the individual learns to classify objects and ideas and people in general categories. So, for instance, consider learning in a hierarchically organized and family oriented society like that of traditional China. Here the child, as he meets and is taught proper behavior toward relatives, teachers, related and unrelated servants, schoolmates, and so on, not only learns to behave in particular ways to particular people or to whole categories of people—to speak with extreme respect to Father's elder brother, to speak with respect to

[10] Gregory Bateson. "Social Planning and the Concept of Deutero-Learning." *Science, Philosophy and Religion.* Second Symposium. Lyman Bryson and Louis Finkelstein, editors. New York: Conference on Science, Philosophy and Religion, 1942. Reprinted in Theodore M. Newcomb, Eugene L. Hartley, and others, editors, *Readings in Social Psychology,* New York: Henry Holt & Co., Inc., 1947, p. 121-28.

all persons elder in age or generation, including a "distant" uncle who happens also to be a servant—but also learns the much more general point of the importance of exact and at the same time complex categorization. This, again, is an instance of deutero-learning.

Deutero-learning is of the utmost importance when the individual —or a cultural group whose members have shared special types of learning—is faced with a new, as yet undefined situation. For then it is not only the simple experience of the past that affects the way the new situation will be seen and dealt with, but also how the individual—or the group—has learned to learn. Before discussing the relevance of this point to our own immediate situation, illustrations from two other cultures may help to clarify what is involved.

Ways of Learning Among the Eskimo

First—the Eskimo.[11] From one point of view, Eskimo culture extends straight across the Arctic region from Greenland to Bering Strait; from another point of view, there are in this region the cultures of hundreds of tribelets, each differing in some manner from all the others, but all sharing in a basic adaptation to an exceedingly difficult and demanding environment. The tribelets are sufficiently alike that an explorer traveling across the Arctic could make himself understood all the way in the Greenland dialect which he had learned. They are sufficiently different from one another in their beliefs and practices and legends that the members of each tribe have a clear sense of their own identity as a group—the people of such-and-such a place.

The Eskimo themselves were great travelers, who thought nothing of setting out on journeys that took months or even years to complete, and so they knew from their own experience that each group had its own ways.[12] From archeological finds and European historical records, we know that Eskimo culture has been extremely stable, until very recently, over a very large area and for a very long period of time. That is, having found adequate solutions for a series of problems—how to build adequate shelters in a landscape singularly devoid of building materials such as wood, how to dress in a very cold climate, how to hunt sea mammals and the migrating musk ox or caribou, how to live on a

[11] Franz Boas. "The Central Eskimo." *Sixth Annual Report of the Bureau of American Ethnology*. Washington, D.C.: the Bureau, 1888.

[12] I am indebted for this point to Dr. Ray Birdwhistell in a personal communication.

See also Edmund Carpenter, "Space Concepts of the Aivilik Eskimos," *Explorations* 5, June 1955, p. 131-45.

diet of meat—generation after generation of Eskimo handed on their knowledge and specific skills with very little change occurring in the transmission. If one reads a naturalist's account of the adaptation of plants and animals to Arctic life,[13] one also finds that they have built into them, as organisms, extremely close adaptations to the very special environment which permit them to survive and even, from time to time, to multiply. The kind of biological conservatism that we can see in the bodily adaptation of animal species, we can also see in the learned behavior of the human inhabitants of this region.

Nevertheless, it has been observed that Eskimo, as individuals, are very inventive in small ways and also that contemporary Eskimo are quite extraordinarily good as mechanics—at understanding what makes very complicated mechanisms work. One might suppose that both these things are at variance with the simplicity of Eskimo material equipment and, more especially, with the conservatism of Eskimo culture. But, in fact, it is individual inventiveness, or adaptability, that has made a basic conservatism possible. For to survive at all, it is not only necessary for the Eskimo hunter to have arrived at a high proficiency in very specific skills—to know the exact moment when, not seeing the seal, to plunge his harpoon into the seal's breathing hole so as to make a killing stroke; but also to be able to make split-second decisions about situations he may, or may not, have faced in the same form before. So we may consider the slight, individual inventiveness of the Eskimo as a continual play upon variation that is never more than that and yet is continually life-saving.

Also, as one looks at Eskimo culture, one observes that they continually operate in terms of a time-space gestalt in which the two are seen as one whole. Eskimo, who are accurate map-makers of their own territory, estimate distance in space as travel-distance, distance in time. Similarly, Eskimo drawings regularly represent a series of events in time as one entity; so in a drawing of a man catching a seal, the entire sequence from the moment when the dogs sniff out the seal hole to the moment when the hunter pulls his catch out of the icy water is presented as one event.

Now it is well known that an understanding of the functioning of complex machines depends in part on the acquisition of such a time-space gestalt. For instance, experienced pilots say that it takes several years for a man to become a good pilot because it takes him that long to learn to visualize his instrument panel not as a series of units but as

[13] Peter Freuchen and Finn Salomonsen. *The Arctic Year*. New York: G. P. Putnam's Sons, Inc., 1958.

patterned combinations from which he draws information. An Eskimo who for the first time sees a recording machine or some other complex electronic device may have had little experience with machines, but he has a trained capacity to observe in fine detail and a trained habit of mind in which motion is seen in a time-space unit, and the machine is something he can understand and even, using ingenuity, may be able to repair—to the amazement of the mechanically trained but baffled owner of the machine. What we do not yet know, about Eskimo learning, is whether this kind of deutero-learning, which was built up from the earliest childhood—for the Eskimo boy learned most of his basic techniques before he was 10—in the traditional culture, will carry over at all in a very rapidly changing life situation in which Eskimo children are learning very different things taught by very differently educated adults.

Eskimo culture derived its stability from a very flexible adaptation to a very fixed but infinitely varying and harshly demanding environment. But there are few cultures in the world where, in the nature of things, choice is both so limited and so important in keeping life going.

Chinese Ways of Learning

From this primitive culture we may turn for contrast to the high civilization of China's traditional culture which was also, in certain respects, characterized by conservatism and great flexibility. Despite a long history of out-migration in the Pacific area and despite almost 100 years of Western penetration of China, with all that this meant in terms of disruption, confusion and change in the content of the culture, the Chinese have conserved their cultural identity.[14]

Yet, in one sense, Chinese culture has unity only in deutero-learning terms, for the local variations in the content of the traditional culture are very considerable. Though in a large area of China the local dialects are mutually intelligible, there are also many dialects which are not mutually intelligible to the *ear*. In different regions of China people do not use the same food resources, grow the same crops, or build their houses in the same style. Nevertheless, if one examines life histories narrated by Chinese men and women from Peking, in the north, and

[14] The material on Chinese culture is derived primarily from two unpublished studies. The first was carried out under the direction of Ruth Bunzel in the late 1940's as part of Columbia University Research in Contemporary Cultures. The second was carried out as part of the Study Program in Human Health and the Ecology of Man, New York Hospital-Cornell Medical College, under the direction of Dr. Harold Wolff.

Canton, in the south, from little villages in the interior and from others along the coast, one finds unmistakable regularities of experience and attitude, just as one does if one compares the life histories of people who grew up in very traditional settings with the life histories of their contemporaries who grew up in a modern city like Shanghai or a foreign-governed island like Hong Kong. There can be no doubt about who grew up where; equally there can be no doubt that all belong to one culture.

In part the unity of Chinese culture has depended upon a variety of bridging devices. So, for example, although the spoken dialects differ greatly, written classical Chinese is everywhere the same. The characters of Chinese writing in large part stand for concepts, but the phonetic expression of these concepts varies from one dialect to another. Only in recent years have the Chinese attempted to take over the Western European device of linguistic unity by teaching a national spoken language,[15] and they are still struggling with the almost insuperable problem of developing an alphabetic form of transcription. Traditionally, Chinese officials made their careers away from their home-locality[16] (a practice which was intended to reduce favoritism but which also enabled officials to enrich their families at the expense of unrelated communities), and the uniform training which such officials had received in the course of their preparation for examinations ensured a network of common communication.

But aside from this, as people moved from one locality to another, their ability to communicate verbally was greatly disrupted—and one discovers with some astonishment (as an American) that this was not necessarily a distressing experience. Rather one finds that the Chinese individual expects, initially, not to understand things that are new and different but also expects the stage of not-understanding to be no more than temporary.

In order to understand this optimistic attitude toward a disruptive situation, one must go back to two situations in the life of the Chinese child and also take account of the Chinese conception of climax structure. In my first work with Chinese informants (in New York City), I had the greatest difficulty in locating the infant and small child in the

[15] So, for example, the teaching of standard French in all French schools and of standard German in all German schools is a conscious method of bridging local cultural variations in these two countries. In Switzerland the use of all four languages in all public documents underlines the federated character of this nation.

[16] At no level could a Chinese official be given a government position in his own locality. So, for instance, a district official had to come from a different district and the governor of a province had to come from another province.

home—for there was no nursery, no special place set apart for small children. Eventually I recognized what my informants had been saying, namely that the infant and small child is always where everyone else is, spends his time in the middle of whatever is going on, not a focus of attention but an invariable presence. Held in the arms of his nurse, his *amah* or some relative, the baby moves among the family; in the arms of his nurse, he watches the people who come past the gate and the people at work in the kitchen, gossiping about the household and the neighborhood.

In this way, even though the traditionally reared child may never move out of his own court before he is seven or eight, he may have a more comprehensive view of what is going on and may live in a more complicated life space than many an adult.[17] But no one attempts to explain to the child what is going on. So, for instance, if one asks a Chinese how it happens that he (and it often is he), who never lifted a cooking spoon in China, is now able to prepare a perfect Chinese meal, he will not say, "My mother told me" or "My nurse explained," but "I watched." While his nurse sat in the big kitchen chatting and joking with the servants who were chopping up and assembling all the ingredients that went into a complicated dish, he "watched." He may add, "And of course I know what it tastes like." And now, needing to, he can cook.

Next, if one inquires about the first steps in the formal education of the traditionally reared Chinese child, one is likely to find that at a very young age he learned to identify simple written characters—sometimes beautifully drawn for him in large scale on a bright red card by a loving and indulgent grandparent. But no one explained the meaning of the characters. And later, when his formal schooling began, he himself learned to write the characters of classical Chinese—learned to control his whole body in a special sitting posture, learned very precisely how to hold his brush, learned to mix ink, learned to copy standard forms of the characters with great exactness—and came to know that this learning could, if he were to become a scholar, continue for 40 years before he could be counted a master of calligraphy. He also learned to recite classical Chinese texts from memory, no word of which had any meaning to him initially and which might never be explained to him.

At that stage he did not expect to understand nor was understanding expected of him, but everyone knew that his understanding would grow. When he was 20 he would have one kind of understanding, when

[17] See, for instance, Chiang Yee, *A Chinese Childhood*, New York: John Day Co., Inc., 1952.

he was 30 he would have a deeper understanding, and when he was 40 and reaching maturity, his understanding would be still more complex. That is, rote learning of texts which were studied by all students was a basis for an understanding that would continue to grow throughout a lifetime's experience of determining meaning. The capacity for spontaneity—for full, free play—was something that was not drawn upon in the beginning but late in life as a result of long training and self-discipline. This was the assurance which was given not by a young teacher but by the elderly grandfather to his preschool age grandson before he became involved in the wearying effort of sitting and memorizing.

When, 50 years or so ago, Chinese children were first sent to study in European or American mission schools and were subjected to languages and a curriculum that were almost totally unrelated in style and content to anything they had previously experienced, this was a very difficult but not a devastating experience. Initially they did not expect to understand, but only to learn; nor did their parents, who often knew as little as the children did about the new learning, consider that lack of understanding was an initial handicap to eventual mastery. Usually they themselves did not feel that it would help the children if they undertook to learn also. As in the past, they insisted upon complete respect for the teacher (not necessarily as a person but as a purveyor of knowledge) and strict application, and assumed that mastery would follow. Often enough it did. Pupils who had begun their education in mission schools went to the United States and Europe to take higher degrees—much as students formerly had passed Imperial examinations. In the long run the repercussions of this learning upon Chinese life were tremendous, but individually Chinese students could take such potentially disruptive learning experiences in their stride.

The expectation of change in the course of time and the need for adaptation can be seen also in the phrasing of interpersonal relationships. In all superordinate-subordinate relations—between parent and child, teacher and student, employer and employee—the superordinate person is permitted great leeway in his behavior. The Chinese are very aware of temperamental differences, but essentially it is only the infant, at one end of the age scale, and the person in a superordinate position, at the other end, who are allowed to express themselves relatively freely. The child, the student, the employee owes the parent, the teacher, the employer, or the superior official complete respect and complete obedience: "If my father says that black is white, I must agree."

However, to a Chinese, this does not mean that the subordinate

behaves hypocritically (in our terms) or that he must—somehow—*see* black as white. What he sees is his own private affair, but what he concedes to his elders and superiors is the unequivocal right to express what they think or feel or believe. The expression of an opinion—where an opinion is wanted—can therefore be a very delicate and subtle affair. But once again, time will make a difference. Every child will someday be a parent and then a grandparent. The lowliest student may one day be a renowned scholar and as a scholar may come to hold a high position but in any case will be entitled to respect. So, as the child and young person learns to behave with respect and to discipline his own expression of feeling, he also learns to expect progressive change until he himself is in a position of authority and some freedom vis-a-vis a new young generation.

The things that the Chinese child learns and the expectations that he acquires as he is learning carry far beyond the original situation to the whole of life. In his first years, when he is sheltered and adapted to by mother or nurse, he is given a sense of the immense complexity of social life and a belief that it will all become meaningful if he waits, if he watches, if he is there. In his difficult early schooling, he learns the extreme importance of every detail of posture and of mastering basic skills by intensive practice and rote learning and comes to recognize that slowly, with mastery, will come understanding. In his relations to adults he learns meticulously the rules of formal courtesy but also the necessity of adapting his performance to the requirements of individually differing adults; in this way he acquires a very considerable flexibility in adapting himself to immediate situations. He learns also to think his own thoughts, if he is thoughtful, without rancor or at least with controlled rancor. (It is interesting that of each generation of mothers-in-law it is said that they are harsh to their young daughters-in-law because of the suffering they had endured as new members of a family, but one does not commonly find parallel statements referring the strictness of teachers or officials back to their earlier situations as subordinates.)

Learning of this kind is basic to Chinese character structure and to the most general attitudes, and it is characteristic of Chinese men and women irrespective of the part of China in which they have grown up and, within limits, of social class or, recently, degree of modernization. And one may say that the very clear perception of form, on the one hand, and the development of a very flexible style of adaptation to immediate situations, on the other hand, are among the things that have made of the Chinese a people who are exceedingly well able to

adapt themselves to change, without devastating fears of failure, and even while bending to the wind are able to retain their identity as Chinese.

Need for New Understanding

May we return now to the contemporary situation in the United States. It seems likely that if we are to judge correctly what changes are needed in, let us say, formal education, we need to have a great deal more insight than we do have, much more precise knowledge than we do have, much greater articulateness than we do have about the deutero-learning aspects of our own culture. In part, our mood swings about the effectiveness of our methods of formal education derived from our imperfect knowledge of what is involved; in part, our difficulties and disagreements about the value of this or that subject or this or that method of teaching derive from our limited definition of "education." For even as we speak of the "whole child" or a "holistic approach" to curricula, we set formal education apart—as something that must do the whole job (for children who suffer various disadvantages) or as something that goes on for a set number of years (differing, of course, for different sorts of education) or as something that is basically irrelevant (when, as sometimes happens, we stress the lack of formal education as an ingredient in the success of a well-known man). And yet we know we have here something exceedingly valuable. What we need is to implement more fully our desire for "wholeness" in education, and to do this we need more intensive knowledge of our culture.

This then is perhaps a contribution which anthropologists can make. At this stage what we lack cannot be supplied by comparative methods but depends on our ability to analyze a complex, rapidly changing culture. Twenty or even 15 years ago we could not have undertaken this kind of analysis with any assurance. For only since the early 1940's have we developed the tools and trained some of the kinds of people that are needed for such studies; and only in this period have we made studies, partial and incomplete as they are, which would provide the necessary wider framework. So, for instance, we now have studies, among others, of English, French, German, Polish, Russian, Chinese, and Japanese cultures.[18] There is also, of course, much American material

[18] See, for instance, Ruth Benedict, *The Chrysanthemum and the Sword*, Boston: Houghton Mifflin, 1946; Sula Benet, *Song, Dance, and Customs of Peasant Poland*, New York: Roy, 1951; Geoffrey Gorer, *Exploring English Character*, London: Cresset, 1955; Geoffrey Gorer and John Rickman, *The People of Great Russia*, London: Cresset, 1949 (New York: Chanticleer Press, 1950); Margaret Mead,

on which we can draw. Thus today we can—if we will—undertake to look more intensively and more systematically at American culture.

In the current excitement about education, particularly science education, we are singularly lacking in knowledge of what is involved, but even from the current discussions of satellites we can get some clues. It is said, for instance, that Americans have not been sufficiently "interested" to work hard enough. This sounds very strange as a description of a people who are proud of their "know-how" and who deeply believe in progress. One clue can be found in the discussions of adolescents about science and scientists in their great emphasis upon the importance of "interest" as motivation and in their negative response to the idea of "dedication."[10] Adolescents commonly state that it is necessary to be interested before one can become a scientist and to be dedicated if one is to make a career of science. But dedication means to them a great many things—isolation, long devotion to something with an uncertain outcome, peculiar attitudes toward money, and so on—which they, having learned other values, repudiate, at least for themselves. When, therefore, we give students models of dedicated scientists, we tend only to reinforce what they have learned—though this is contrary to our intention.

This small point is no more than a single example of the kind of knowledge we need to have; but small as it is, it highlights our need to be much more inclusive in our consideration of the sources of education and our need to understand secondary as well as primary learning as a decisive factor in the acquisition of an education.

Soviet Attitudes Toward Authority, New York: McGraw-Hill, 1951; Rhoda Métraux and Margaret Mead, *Themes in French Culture*, Stanford: Stanford University Press, 1953; David Rodnick, *Postwar Germans*, New Haven: Yale University Press, 1948. For a discussion of the work done in Columbia University Research in Contemporary Cultures, where studies of this kind were organized in the late 1940's, see Margaret Mead and Rhoda Métraux, *The Study of Culture at a Distance*, Chicago: University of Chicago Press, 1953.

[10] Margaret Mead and Rhoda Métraux. "Image of the Scientist among High School Students." *op. cit.*

New Ideas About . . .

The Communication Revolution and Learning[1]

Robert E. Shafer

One way to understand what the study of communication means in contemporary society is to look carefully at those who study communication processes today and at what is studied. To list all the students of human communication, of course, would take a far greater amount of space than is here available. There are now many such students; and although they may be studying the same phenomena, their methods and approaches are exceedingly diverse. However, if we take as our tentative definition of communication one provided by Ruesch and Bateson, we may find a way to select from these varied approaches some key ideas to help us in thinking about the study of communication and its implications for school learning:

> Communication would include all those processes by which people influence one another. . . . This definition is based on the premise that all actions and events have communicative aspects, as soon as they are perceived by a human being . . . [and] that such perception changes the information an individual possesses and therefore influences him.[2]

It is obvious that although the process so described is one immediately familiar to all of us, it has infinite ramifications for study by many groups of scholars in the complex communicative environment provided by our twentieth century world.

Growth of College Communications Programs

The fact is that the study of communication since World War II in American colleges and universities has been largely interdisciplinary

[1] Abridged from the original address.

[2] Jurgen Ruesch and Gregory Bateson. *Communication, the Social Matrix of Psychiatry*. New York: W. W. Norton & Co., Inc., 1951, p. 6.

with contributions coming from interdivisional or interdepartmental committees within a college or a university. Two examples follow.

A recent copy of the announcements of the University of Chicago describes the university's Committee on Communication, established in 1948, as including two faculty members in communication *per se* (one of these, Douglas Waples, is chairman of the committee and is professor of international communication), three in sociology, one in international relations, one in business administration, one in English, one in education, one in statistics, two in psychology, and two in law.

The scope of the committee's research program is defined by the diverse interests of its membership. These interests currently include:

1. The influence of mass communication upon political behavior and public decisions
2. The evaluation of strategic intelligence for purposes of international communication
3. The relations between popular culture and mass media content
4. The impact of mass media on the values, customs, and mores of society
5. The role of interpersonal relations in the mass persuasion process
6. The diffusion of information and attitudes about new products, processes, programs, or techniques
7. The formulation and validation of standards of press performance compatible with democratic requirements
8. The theoretical contributions and social effects of information theory
9. The factors which determine acceptance or rejection of persuasive communications.[3]

A second representative interdisciplinary program in communication and the communication arts has existed since 1943 at Teachers College, Columbia University. This is a professional program which seeks to prepare teachers of communication and the communication arts and skills as well as communication specialists. The committee of advisors for the program includes professors of English, fine arts, psychology, history, drama, speech, and sociology, most of whom are members of the college interdivisional seminar on communication and also lecturers in the basic course.[4]

[3] *Announcements*. Vol. LVIII, October 30, 1957, No. 2. Chicago: University of Chicago Press, p. 224-26.

[4] *Teachers College Bulletin, Announcement for 1958-59*. 49th Series, No. 2, April 1958. New York: Bureau of Publications, Teachers College, Columbia University, p. 229-31.

In a recently issued publication, nine articles written by faculty members and lecturers attempt to provide "test borings at promising points in the broad and varied communication field."[5] In one of these, Lennox Grey relates the experience of the department in working with ideas about communication from many fields. Noting 14 doctoral studies which have been made since World War II, he states:

> All of these studies pivot on the key concepts of modern communication inquiry: that communication is a two-way symbolic process; that human community depends on communication through symbols in the family, the neighborhood, the region, and throughout the world; that the variable interpretation of such symbols is the basis of much of our misunderstanding; that symbols of various kinds reinforce one another in the communication of information, ideas, feelings, and values; that skill in the arts of communication is essential for individual development, for social competence, for intellectual growth, for personal resourcefulness; that new media and arts of mass communication may provide more of our common experience than print provides; that new instruments and acts of communication now for the first time make possible world community, as well as much larger and tightly integrated local community units.[6]

It seems fairly clear after a brief look at these two programs that present scholarship in the field of communication is interdisciplinary and that it tends to focus on human symbolic behavior and the symbolic environment in all its varied manifestations. Similar programs are currently in existence at Yale, Iowa, Stanford, Michigan State, Toronto, the University of Southern California, and San Francisco State College, to name a few.

Growth of New Knowledge in the Field

Perhaps the real significance of these programs, developing as quickly as they have since World War II, lies in the fact that they are a response to the explosion of knowledge that has taken place in our culture in this century. We are dealing with forms of knowledge we hardly knew existed before World War II.

Many of these new understandings relate to communication. As President White of Mills College points out, one of the most pervasive changes in our contemporary culture is the one from the canon of logic and language to the canon of symbols:

[5] Francis Shoemaker, editor. *Communication and the Communication Arts*. New York: Bureau of Publications, Teachers College, Columbia University, 1955, p. 63.
[6] *Ibid.*, p. 131.

For more than two thousand years of western civilization since the time of the Greeks it has been axiomatic that logic and language are perfected instruments of intellectual analysis and expression. The training of our minds has consisted essentially of getting skills in logic, whether in its philosophical or its mathematical form, and in language by which we have meant the European and, until recently, the classical tongues. Much of our present discussion of education is still based on the premise that the mind which has mastered logic and language is able to achieve clear and efficient results in any field.[7]

But this canon of logic and language has been given wider context in recent years by the attention to human symbolic processes of scholars in the physical as well as the social sciences and the humanities. The purposes of these scholars have varied greatly—all the way from the establishment of a mathematical theory of communication, in the case of Norbert Wiener[8] and Claude Shannon[9] with applications to cybernetics and information theory, to the development by Susanne Langer of a "new key in philosophy" through her theory of human symbolic transformation.[10]

Our scholars have been stimulated by an electronic technology which has made all known information in all cultures simultaneously available to members of our own culture and which has shifted from the transmission of information to the packaging and channeling of information. They have examined the processes of human symbolization in contemporary culture and have noted the coming of another revolution in communication, one which daily places increasing demands upon all of us.

Importance of Historical or Cultural Approach

In order to understand the significance of the present revolution in communication, it is helpful to look briefly at the history of communication media in cultures other than our own. Of considerable help in this venture is the work of the Seminar on Culture and Communication at the University of Toronto under the leadership of Professors Marshall McLuhan and Edmund Carpenter. In presenting this his-

[7] Lynn White, Jr. *Frontiers of Knowledge in the Study of Man*. New York: Harper and Brothers, 1956, p. 302.

[8] Norbert Wiener. *Cybernetics*. New York: John Wiley & Sons, Inc., 1948.

[9] Claude E. Shannon and Warren Weaver. *The Mathematical Theory of Communication*. Urbana: University of Illinois Press, 1949.

[10] Susanne K. Langer. *Philosophy in a New Key*. Cambridge: Harvard University Press, 1942.

torical sketch of the mass media I have drawn freely from *Explorations 1-8*,[11] which are publications of that seminar, and from the work of the late Harold A. Innis, historian of communication, also at the University of Toronto.

Harold Innis was known as the historian of the cod fisheries and of the Canadian pulp and paper industry. His studies of such industries and his resulting analyses of such problems as competition and monopoly, change and order, growth and decay led him to pose the hypothesis that changes in communication media and in the consequent balance between the oral and written traditions provide both clues and answers to changes in human conditions.

Basically, Innis saw Western civilization as beginning with the written tradition rooted in space. Between the two traditions lay a series of technological innovations, each giving rise to a new medium of communication. Each medium in turn eventually resulted in a monopoly of knowledge which distorted the conditions suited to creative thought in that medium and was eventually displaced by a medium with its peculiar type of monopoly of knowledge. Each medium over a long period determined to some extent the type of knowledge communicated.

There were, of course, countless other innovations. For Innis, however, history from the beginnings of writing to the invention of the printing press was divided into four major eras dominated successively by the use of clay, papyrus, parchment, and paper as communication media. To the traditional historical sequence—Rome, Holy Roman Empire, and rise of nationalism—Innis equated the communication sequence: papyrus, parchment, and printing.

The correspondence was not held to be absolute; Innis seemed more anxious to describe what had been than to imply the causing of changing social and economic conditions by the various media. He noted that oftentimes the medium on which words were written was, historically speaking, more important than the words themselves. Papyrus, for example, being light and easily stored in the desert, put the priests of Egypt in command of the calendar and, in Big Brother fashion, of social memory and was essential to the spread of Egyptian dynasties in space and the hegemony of the priests in time. The clay tablets of Sumeria were put out of business by the greater convenience of the newer forms, much the same as many downtown movie houses have been put out of business by radio and television.

[11] Published three times a year since 1954 by the University of Toronto Press.

Innis became a historian-anthropologist interested in cultural development and change. He wrote *The Bias of Communication*[12] in response to Kroeber's *Configurations of Culture Growth*.[13] While Kroeber avoided causes, limiting his study to a description of cultural growth and decline, Innis saw in these configurations a causal factor which he felt could account for both cultural stability and change. This causal agent he called the bias of imbalance which developed in the use of a particular communication channel or medium.

Characteristics of the Oral Tradition

Anthropological and historical literature revealed to Innis the operation of two distinct, often mutually exclusive, communication media, the oral and the written. The former he found to be temporal, the latter spatial. Ideally both needed to be balanced by any society that expected to survive and prosper, but history reveals that this was rarely the case.

If we take as our example of the oral tradition that of Greece, we may find, as Innis stated, "that the task of understanding a culture built on the oral tradition is impossible for students steeped in the written tradition."[14] Innis also believed "that Greek civilization was a reflection of the power of the spoken word."[15] What he meant by the oral tradition with regard to Greece was essentially what the words imply—a selection from the history of a people, a series of related events culturally defined as significant, and their oral transmission from generation to generation as in the case of Homer's *Illiad* or *Odyssey*.

Ultimately the oral tradition of the Greeks was committed to writing, but it remained an oral tradition which subordinated writing for its own purposes. Growing out of innumerable face to face contacts, endlessly modified, in accordance with changing circumstances, the poems of Homer were the work of generations of reciters and minstrels and reflected the demands of generations of audiences to whom they were recited. They were a link with the living past of all concerned. Their recitation was a social occasion, symbolic of both continuity in time and social cohesion in the present. The minstrel was immediately

[12] Harold Innis. *The Bias of Communication*. Toronto: University of Toronto Press, 1951.

[13] Alfred L. Kroeber. *Configurations of Culture Growth*. Berkeley: University of California Press, 1944.

[14] Harold Innis. *Empire and Communication*. New York: Oxford University Press, 1950, p. 9.

[15] *Ibid.*, p. 67.

aware of the effect of his performance on the audience, and the audience immediately and directly responded.

The content, then, was a series of past events, like the events told of the battle of Troy, that not only helped to share the present but gave it meaning and significance. The oral tradition was a total process making the common past immediately and simultaneously present. The most significant and enduring product of this process was the cohesion and the continuity of the group itself.

An interesting example of the strength of the oral tradition lies in its resistance to writing. Socrates in *Phaedrus* reports a conversation between the Egyptian god Thoth, the inventor of letters, and the god Amon in which the latter remarked:

> This discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves. The specific you have discovered is an aid, not to memory, but to reminiscence, and you give your disciples not truth, but only the semblance of truth; they will be hearers of many things and will have learned nothing; they will be tiresome company, having the show of wisdom without the reality.[16]

Socrates continues:

> I cannot help feeling, Phaedrus, that writing is unfortunately like painting; for the creations of the painter have the attitude of life, and yet if you ask them a question, they preserve a solemn silence, and the same may be said of speeches. You would imagine that they had intelligence, but if you want to know anything and put a question to one of them the speaker always gives one unvarying answer.[17]

If we move to a nonliterate culture for another example of the persistence and flexibility of the oral tradition, we might look at Ruth Underhill's transcript of the autobiography of a Papago Indian woman for a sense of the impact of the spoken word where no other modes of communication compete with it. One passage goes as follows:

> The men from all the villages met at Basket Cap mountain and there my father made them speeches, sitting with his arms folded and talking low as all great men do. Then they sang the war songs:
>
> Oh bitter wind, keep blowing
> That therewith my enemy
> Staggering forward
> Shall fall. . . .

[16] F. M. Cornford. *Before and After Socrates*. Cambridge, England: Cambridge University Press, 1952, p. 54.
[17] *Ibid.*, p. 54.

Many, many songs they sang but I, a woman, cannot tell you all. I know that they made the enemy blind and dizzy with their singing and that they told the gopher to gnaw their arrows. And I know that they called on our dead warriors who have turned into owls and live in the Apache country to come and tell them where the enemy were.[18]

There are many other examples that one might give to illustrate the impressiveness of the spoken or sung word when it monopolizes the symbolic environment. As David Riesman points out, when a whole society depends on what individuals can remember, it can hardly help depending on every device of both demagogue and poet: rhyme, rhythm, melody, structure, and repetition. Moreover, in such circumstances, the common meanings derived through emotional group experiences from childhood on tend to limit the development of diverse personalities "since," in Riesman's words, "individuality depends to some degree on social differentiation and distance."[19]

Perhaps the most essential characteristic of the oral tradition is the extreme flexibility in the immediate foreground and the extreme persistence and rigidity in the over-all pattern. In a society depending for communication entirely on the oral tradition, individuals have life-cycles—they live through childhood; they are initiated; they become adult; they grow old; they die—but they do not have careers in our abstract sense of the term. An oral society like the Arabs' seems very flighty, amorphous, and shifting to the casual observers. Compared to that of England or America, it is monolithic in its permanence. Only oral peoples have a memory for the past which for them is always present. A literary people entrusts its memory to its scribes, not its bards. For the Irish, with a distinctly oral culture, as also in the American South, the past is now. To a literary society, this habit of mind seems fantastic and morbid.

Growth of the Written Tradition

When books or writing are introduced into an oral culture, the effect is startling. Innis documents the effects of books and writing on later Greece and early Rome and points further to the role of parchment in contributing to the rise of a powerful ecclesiastical organization during the Middle Ages. The manufacturing of paper in Europe by the

[18] Quoted in David Riesman, *The Oral Tradition, The Written Word, and The Screen Image*, Yellow Springs, Ohio: The Antioch Press, 1956, p. 6.

[19] *Ibid*, p. 8-9.

end of the thirteenth century increased the growing gap between the oral and written traditions.[20]

Innis notes another revolution in communication with the development of the use of paper and the rise of the printing press in the fifteenth century. This revolution displaced monasticism's monopoly of knowledge with that of the vernacular and roughly paralleled the rise of the Protestant, whose ability to read a Bible printed in his own tongue extended his individuality. The development of political, economic, religious nationalism is seen to correspond roughly with the development of the printed vernacular.

At this point, it may be productive to look at the effects of print on culture in terms of the way people learn as well as what they learn.

Erasmus was perhaps the first to recognize that a revolution in learning would take place in the classroom with the introduction of the printed page as a highly specialized and spatialized form of communication. Erasmus knew that the pupil of the Middle Ages before print had first to make his own copies of his texts from dictation. Learning was still essentially auditory, with students listening, copying, and reciting orally. Having to decipher manuscripts slowly promoted memorization, which in turn promoted argument by quotation and commentary.

The printed book liquidated two thousand years of manuscript culture by creating the solitary reader, his eyes moving over one line of type after another, alone with his reflections, inducements and identifications. As David Riesman has noted:

> The book and other printed matter stood as the end of the road of social development from the 15th century to the end of the 19th. The sway of black print on white paper may be said to mark the epoch of the rise and increasing influence of the middle class—the class of clerks and bookkeepers, merchants and engineers, instruction-givers and instruction-readers, the class of the time-attentive, the future oriented, the mobile. Reading and education (in the written tradition) were the high-roads this class made use of to rise in the world and to move about in it during the great colonization periods.[21]

It would seem then that the great virtue of writing—and of print as mechanized writing—is its power to arrest thought for quiet contemplation and analysis. Printing hastened individuality and nationalism; and the newspaper, although an oral medium in its simultaneous global effect on the reader, has pushed that nationalism to the ultimate.

[20] Harold Innis, *op. cit.*
[21] David Riesman, *op cit.*, p. 27.

Equilibrium Between the Two Traditions

Before we consider the twentieth century revolution in communication in relation to its effect on learning, it might be well to illustrate the nature of equilibrium between the oral and written traditions in our own time. Since we are primarily products of a culture which has been dominated by print, some of us might conclude that the oral tradition is no longer manifesting itself.

However, in the publications of the Toronto Seminar we find a number of examples which tend to show the persistence of the oral tradition to the extent of documenting its return to equilibrium if not prominence. The following comments on the character of Sherlock Holmes, the many-sided man, and of his triumphs over Scotland Yard result in a vivid image of the basic clash of oral and written attitudes in Western culture:

> Sherlock Holmes is so much the type of the oral intuitive genius that it is unnecessary to dwell at length on the characteristics of the intuitive mind. It is a mind for which situations are total and inclusive unities. Every facet, every item of a situation, for Holmes has total relevance. There are no irrelevant details for him. In an organic complex all parts have total relevance. In the nineteenth century the power of the biological metaphor, such as obsessed the Holmesian mind of Samuel Taylor Coleridge in his scrutiny of artistic creation, gradually was extended to every phase of human speculation and inquiry. This concentration on biological analogy with its assumption of total relevance of the least details begins to appear in the joy taken in the new realism, in documenting the most ordinary scenes from daily life in the press, in the novel, and in painting.[22]

The novelist John Steinbeck made this concept extremely explicit in his *Sea of Cortez* written with the marine biologist Edward F. Ricketts. His ecological outlook, indicating his perception of the total relevance of detail in the Sea of Cortez, is evident in his preface:

> We have a book to write about the Gulf of California. We could do one of several things about its design. But we have decided to let it form itself: its boundaries a boat and a sea; its duration a six weeks' charter time; its subject everything we could see and think and even imagine. . . .
>
> "Let us go," we said, "into the Sea of Cortez, realizing that we become forever a part of it; that our rubber boots slogging through a flat of eelgrass, that the rocks we turn over in a tide-pool, make us truly and permanently a factor in the ecology of the region. We shall take something away from it, but we shall leave something too." And if we seem a small

[22] Marshall McLuhan. "Sherlock Holmes vs. the Bureaucrat." *Explorations* 8. Toronto: University of Toronto Press, 1957, p. 10-11.

factor in a huge pattern, nevertheless it is of relative importance. We take a tiny colony of soft corals from a rock in a little water world. And that isn't terribly important to the tide pool. Fifty miles away the Japanese shrimp boats are dredging with overlapping scoops, bringing up tons of shrimps, rapidly destroying the ecological balance of the whole region. That isn't very important to the world. And six thousand miles away the great bombs are falling on London and the stars are not moved thereby. None of it is important or all of it is.[23]

The novelist Flaubert showed a similar awareness of total relevance. For Flaubert every word in a long novel had total relevance to the whole novel, not just to the local episode. Like Steinbeck, Flaubert is an instance of the new artist for whom every artistic situation is total and inclusive of many of the simultaneous levels which occur in actual experience.

For this artist, with his ecological view of man in society, the natural enemy is the bureaucrat, the man with his tidy desk, the orderly mind devoid of simultaneous modes of awareness and observation. No documentation is needed to see immediately that the admirable administration of Scotland Yard is hostile to the inclusive and instantaneous grouping of situations. The technology of the Yard is serial, segmented and circumstantial. The good Inspector concludes effect from immediately preceding cause in lineal and chronological order. He does not dream of totalities or the major relevance of details.

Winston Churchill may also be seen as an example of an individual of genuine oral temper and character. But the full significance of this oral man only becomes vivid when contrasted with the methodical, lineal temper of his wartime chief-of-staff, Lord Alanbrooke. Arthur Bryant's new book, *The Turn of the Tide*, based on the war diaries of Field Marshal Viscount Alanbrooke is as complete a picture of the British clash of written and oral men as William Whyte, Jr.'s *The Organization Man* is a picture of the same clash in America. Early in the book Bryant sets up the contrast between the two men. He writes:

> Yet, if the palm for courage and constancy in the struggle against Hitler belongs to Churchill, that for farsighted strategy may well be awarded by posterity to Alanbrooke.[24]

[23] John Steinbeck and Edward F. Ricketts. *Sea of Cortez*. New York: Viking Press, 1941, p. 1-2. Copyrighted by John Steinbeck and Edward F. Ricketts. Reprinted by permission of Viking Press, Inc.

[24] Arthur Bryant. *The Turn of the Tide*. Garden City: Doubleday & Co., Inc., 1957, p. 18. Copyrighted by Arthur Bryant, reprinted by permission of Doubleday & Company, Inc.

Alanbrooke tells the story of Churchill's casual decision to change destination just at take-off time and then, in speaking of Churchill, notes:

> He loved these sudden changes of plans. Unfortunately, he wished to carry out similar changes on strategy. I had the greatest difficulty in making him realize that strategy was a long term process in which you could not frequently change your mind.[25]

Churchill, for whom the whole English language was as much a simultaneous entity as all facets of the war, could act optimistically and whimsically at all times. The long term meant unchanging confidence and resourcefulness within and an outer readiness to do everything at once and change direction dramatically. Churchill was inflexible in terms of his long range goals (as is characteristic of men of the oral tradition); but his chief-of-staff, for whom there could be only one goal or task at a time, was as pessimistic as he was meticulous and methodical. For Alanbrooke, the long term process meant the immediate pursuit of a single line. He was as inflexible on a segment as the solitary reader is on a line of print. Bryant documents his difficulty in understanding Churchill: "And Winston? Thinks one thing at one moment and another at another moment . . . wants to carry out all operations simultaneously. . . ."[26]

The contrast between the oral and written traditions seems sharply set off in these two men. Alanbrooke was noted as a man of regular hours in spite of staying up late with Winston Churchill. Churchill preferred to work by intuition and impulse.

Perhaps an interesting sidelight on Alanbrooke is contained in his comments on Americans. He was baffled by Americans and by their preference for global strategy.

> . . . Again discussion of global strategy which led us nowhere. The trouble is that the American mind likes proceeding from the general to the particular whilst in the problem we have to solve, we cannot evolve any sort of general doctrine until we have carefully examined the particular details of each problem.[27]

Marshall McLuhan has commented on this particular passage:

> As soon as he encountered the Americans, Alanbrooke became an oral man by contrast. In his own British and oral culture he was an extreme example of the lineal bureaucrat. But as soon as he met the men of a

[25] *Ibid.*, p. 470.
[26] *Ibid.*, p. 513.
[27] *Ibid.*, p. 507.

Simon-pure print culture with their yen for blueprints and over-all pictures, Alanbrooke rallied to the oral pole of his own culture. The Americans as visual, lineal men had to begin from the total scene before they could proceed to small analysis, whereas the man of British oral background always has the auditory sense of being in possession of the whole situation and is ready to consider only particulars. Even the Canadian has some of this auditory sense of the over-all as something felt rather than as something spelled out or visualized. The auditory position always feels very superior to the visual one simply because of its instant, intuitive dynamic.[28]

Fortunately for Churchill, Roosevelt was a man of oral simultaneity and not of the carefully cautious, wary temper.

If Churchill and Alanbrooke stood as illustrations of the oral and written tradition in British culture, then what of our own? Marshall McLuhan's comment implies that we have been bound to print. He also points out that historically we were colonized when the only culture available to most men was that of the printed book, the inference being that to this day we associate culture mainly with books. But we have always had a rich oral tradition which existed on the American frontier in our folk speech and which still holds sway in the South, as Faulkner's work so aptly illustrates.

The Dominance of New Media

Recently we have become increasingly conscious of the electronic revolution in communication. This revolution has brought us the new media of radio, television, and film that have continued the reaction against the written tradition which began with the newspaper. As Edmund Carpenter has pointed out, these media are conceived as languages with their own grammars as yet unwritten:

> The newspaper (from the beginning an oral medium) brought an end to book culture. . . . It offers short, discrete articles which give important facts first and then taper off to incidental details which may be, and often are, eliminated by the make-up man. The fact that reporters cannot control the length of their articles means that in writing them emphasis cannot be placed on structure, at least in the traditional linear sense, with climax or conclusion at the end. Everything must be captured in the headline; from there it goes down the pyramid to incidentals. In fact, there is often more in the headline than in the article; occasionally no article at all accompanies the former headline.[29]

[28] Marshall McLuhan. "Churchill Mobilizes the English Language." *Explorations* 8. Toronto: University of Toronto Press, 1957, p. 22.

[29] Edmund Carpenter. "The New Languages." *Explorations* 7. Toronto: University of Toronto Press, 1957, p. 6.

The position of articles on the front page is determined by interest and importance, not content. Unrelated reports from London, Washington, Djakarta, and Moscow are juxtaposed. For the reader, time and space are destroyed and the here and now are presented as a single gestalt. Such a format creates a sense of simultaneity, not chronology or lineality. Items abstracted from total situations are not arranged in causal sequence but are presented holistically, as new experience.

The same is true of the picture magazine format (and modern Americans have been proved to be readers of magazines, not books), where the format as a whole opposes lineality. In *Life*, extremes are juxtaposed, space ships and prehistoric monsters, Flemish monasteries and dope addicts. It creates a sense of urgency and uncertainty, the next page is unpredictable. One encounters rapidly a riot in Teheran, Nasser arriving in Moscow, and a Hollywood marriage, all sandwiched between advertisements. The eye takes in the page as a whole, and the page—indeed, the whole magazine—becomes a single gestalt in which association, though not causal, is indeed life-like.

In both film and TV, the angle shifts constantly. The same scene is shown in multiple perspective and focus. The viewer sees it from over here, from over there, from over here again. Finally he is drawn inexorably into it and becomes a part of it. Just as radio helped bring back inflection in speech, so film and TV are aiding us in the recovery of gesture and facial awareness—a rich, colorful language conveying moods and emotions, happenings and characters. Feeding the product of one medium through another creates an entirely new product. When Hollywood buys a novel, it buys a title and the publicity associated with it. What results is a different art product in a new language. The problem usually is to adapt the book to the film medium exploiting its unique strategies, as is the case when a novel like *The Caine Mutiny* was adapted to the stage, film, and TV. A new hero resulted in each instance because of the demands of the medium.

Each medium, if its bias is properly exploited, reveals and communicates a unique aspect of reality, of truth. Each offers a different perspective, a way of seeing an otherwise hidden dimension of reality. As Edmund Carpenter points out, it is not a question of one reality being true, the others distortions. One allows us to see from one point, another from still a different point. New perspectives are awakened and brought to the fore, including those made invisible by the "blinders" of the old language.

Yet a new language is rarely welcomed by the old. As we have seen, Socrates distrusted writing; manuscript culture was contemptuous of

printing; and book culture hated the press, that "slag-heap of hellish passions," as one 19th century scholar called it.

Significance of a Post-Literate World

All of us are conscious of the power and impact of the new media of communication, although few of us have taken them seriously. Because of our basic orientation to print, we tend to regard TV, radio and film as concerned almost exclusively with entertainment. We have not yet seen beneath the surface of the new media—that they exist not so much in themselves but as types of collective life felt and perceived through a mass medium. Pogo, Marshal Matt Dillon, and Bob Hope become points of collective awareness and communication for an entire society.

In fostering such collective awareness, our new electronic media have helped to drive us toward a new balance between the oral and written traditions, but this new equilibrium is as yet uncharted. We do not know much about the effects of these new languages on human experience or human learning. We do know that they provide a flow of information from all points in the world to make men in one part of the world simultaneously present with men in another. As art-forms they can make the past immediately present, as when several million TV viewers can watch Shakespearean or Greek tragedy in a collective body.

Today many children read and study with the radio playing in the same room. They must, it seems, be orally engaged in order to attend to the visual tasks of reading and writing. As McLuhan points out, the silent classroom favors only those who have been "rigidly immersed in habits of silent solitary reading."[80] The normal learning environment for young people growing up in modern communicative society seems to be one quite different from that of even a short time ago.

Today's normal communicative environment, with messages carried simultaneously by different media on several levels, creates new habits of attention in which the adult world is little skilled. The fall in the level of literacy (in reading and writing print) goes hand in hand with the great increase in oral communication in the culture carried by the new media. Literacy is the social acceptance of the monopoly of one form of perception—print. As we strive for a new balance between the

[80] Marshall McLuhan. "Classroom Without Walls." *Explorations* 7. Toronto: University of Toronto Press, 1957, p. 22.

oral and written traditions, it would be well to diagnose the total situation before we become prophets of doom.

Certainly we are familiar with such prophets as those who have warned us of "the new illiteracy," the many reading and writing problems in the schools, and the pressures toward what they call "conformity" in our society. There is no better testimonial to the resurgence of the oral tradition in American culture than William H. Whyte, Jr.'s *The Organization Man.*

Most of us are undoubtedly familiar with the theme of this book, the fact that a new type of man has been created in the American business world. Whyte remarks on the change:

> At the risk of oversimplification, the difference can be described as that between the Protestant Ethic and the Social Ethic. In one type of program we will see that the primary emphasis is on work and on competition; in the other on managing others' work and on cooperation.[31]

The book documents again and again the nature of the new corporation man, who together with other members of the corporation team brainstorms his way along through life. Whyte notes that the new crop of young executives in turning their backs on the Protestant Ethic are without avarice. They don't talk in terms of the dollar, but of the "good life."

> This life is first of all calm and ordered . . . it is a nice place, out in the suburbs, a wife and three children, one, maybe two cars . . . and a summer place out at the lake or out on the Cape, and a good college education for the children.[32]

Also Whyte notes the tendency of the new oral organization men to want to be given the party line; that is, to want to be let in on the proper communication channels of the group in order to feel a part of the team. The only possibility in such a structure is a monarchial apex of control. Where the activities of many are to be orchestrated, there can only be one conductor. But the more necessary the conductor, the more expendable he becomes. The first job of a top executive today is to see to it that there are several who can succeed him instantly and often one of them does.

Whyte views with alarm our oral drive toward conformity and precise interlocking musical harmony. He is not happy at all about the Utopian social engineers of today who aim at total integration of man

[31] William H. Whyte, Jr. *The Organization Man.* New York: Simon and Schuster, 1956, p. 112.
[32] *Ibid.*, p. 71.

and society. He is not happy about the young corporation trainees eager to be processed into standardized entities so that they can be available as replacement parts of a big organization.

We owe Whyte a debt for displacing himself from the old print technology and culture and seeing the new forms that are taking over. Of course, had we had any awareness of the psychodynamics of the Gutenberg era before the Marconi era began to take over, we would have all been less surprised and much better able to effect a proper transition to the new culture without total jettisoning of the educational and social values of print and lineality. Instead of understanding these matters, we have tended to substitute moral denunciation and recrimination, alarm and complacency.

About the problems of school learning we have here said little explicitly, but perhaps more implicitly. In striving to achieve a balance between the oral and written traditions in an age of post-literacy, we may conceive the school as a great communication laboratory where students receive information and learn to organize and evaluate it as well. Also, when the new media are recognized as art-forms worthy of study and analysis, we may penetrate even further in understanding human cognitive and creative processes.

In helping our students learn enough to make the critical decisions which lie ahead, we will need the full resources of all existing systems of communication as well as a knowledge of their own unique strategies.

New Ideas About . . .

Believing and Behaving: Perception and Learning[1]

Robert E. Bills

What is meant by perceptual psychology and by learning as these terms are used in this paper?

The term perception is construed by psychologists to mean many different things. In fact, at least 13 perceptual theories have been offered. To delimit this discussion, I would like to write within an area roughly defined by the phenomenology of Snygg and Combs, the transactionalism of Ames and others, and the client-centered framework of Rogers. Somewhat arbitrarily, we will limit this presentation to perception in the sense of how a person "sees" or perceives things and how his perceptions affect his learning.

As for the term "learning" may I suggest that we concern ourselves with the learning of boys and girls in classrooms as educators understand that learning to be. We then are concerned with human learning as it affects how boys and girls see things and how they behave.

Assumptions About Behavior from a Perceptual Point of View

The perceptionist makes several assumptions about behavior which we should examine in order to further our understanding. These are in sharp contrast to many of the assumptions currently in vogue.

The primary assumption of the perceptionist is that behavior is a function of perception. A person behaves in ways which are consistent with his view of his world. That is, as he "sees" so does he behave. How he behaves is consistent with how he sees things, and what he believes *is* truth for him. For example, when man believed that the world was flat, he avoided the edges. When he believed that demons and devils caused disease, he attempted to drive them out with bad odors and loud

[1] Abridged from the original address.

noises. Since he now believes that science will be the salvation of the free world, he seeks to emphasize science in his teaching.

To understand behavior fully from the perceptual point of view, we must examine two additional assumptions. The first of these is implied in the assumption that behavior is a function of perception. If behavior is a function of perception, then people must be able to act on their perceptions and behavior is not the result of stimulation alone. The perceptionist assumes that people have a capacity for self-actualization, that is, they are self-starters.

The second of these two assumptions follows also from the assumption that behavior is a function of perception. At the instant of action, a behaver has numerous possible behavioral acts with which to implement his perceptions. He must choose from among these. Shall he do this or shall he do that? This strongly suggests that some basis exists to enable him to make choices, the consistency of which may be recognized in his personality. Those who know us often are able to predict the action we will select from among alternatives. When we do not select the expected, there is surprise and they may remark, "I'm surprised. I expected otherwise." The selection of behavioral acts is made in light of the behaver's beliefs, the guiding principle of which seems to be maintenance or enhancement of self-organization. At the instant of action, a person selects to do that which seems to hold greatest promise for maintaining or enhancing his self-organization.

Judged by an outside observer, the behaver's choice may seem to be inadequate to maintain or enhance self-organization. Sometimes it appears to the observer that the choice of action may even threaten self-organization or make maintenance more difficult. Be this as it may, we must return to our first assumption: behavior is a function of perception—not the observer's perception but the behaver's.

These then are the basic assumptions of the perceptual psychologists within an area broadly bounded by transactionalism, phenomenology, and client-centered theory: (a) Behavior is a function of perception; (b) Man is self-actualizing; and (c) The basic need is to maintain or enhance self-organization.

If behavior is a function of perception, then we should examine the factors which give rise to our perceptions. This also seems an important thing to do since I believe that educators are in business to change human behavior within the framework of our democratic society. If behavior is a function of perception and if we wish to change human behavior, then we must change perceptions.

Certainly, it is debatable whether or not change in human behavior is the purpose of education. I have heard many people argue that this is not the purpose. It seems to me that most of these people shy away from this purpose because of fears of indoctrination. And this point is well taken if we are thinking of the development of a specific set of perceptions or of specific behavior in people.

However, this is not the only alternative. The purpose accepted by many perceptionists is to increase the ability of a person to make adequate preceptions. Part of this purpose is to free him from his own dogmas and past experiences which may prevent him from seeing things in new ways. The perceptionist seeks to enable people to see things in new ways and to shift their perceptions rather than to see things in *a* new way or only *one* new way. Basically, the perceptionist seeks to further the correspondence between the organic sensation and the perception which stems from it, and to increase the range of possible behaviors. We seek to help people be more open to their experience—past, present, and future.

If we accept the above assumptions about behavior and the purpose stated for education, then it becomes important that we examine more fully the factors which influence perception.

Perceptual Determinants

Most of the factors in perception may be classed as beliefs. Beliefs bear a high correspondence to the perceived experiences of a person and for him they constitute reality. But our perceptions are so personal that they may be called beliefs. Let us start by examining what is included in the category of beliefs and then offer other categories that may be helpful in our thinking. As we progress through this stage of our thinking, I will use a number of terms which will be poorly defined and which will overlap considerably. This will probably not be too disturbing to the reader if he can accept our purpose as one of communication.

Beliefs. What we believe to be true has much to do with how we behave. We have already mentioned man's behavior when he believed that the world was flat or that demons caused disease. The list of such examples is almost inexhaustible. It causes me to wonder how many of today's facts may be tomorrow's erroneous beliefs. I am reminded of the dean who in his address to the medical school graduates said, "At least half of what we have taught you is incorrect. The worst part is we do not know which half."

Beliefs have considerable variety. They may be of the order of pur-

pose or assumption, faith, knowledge, or superstition. But they have one factor in common—for us they are reality, and we behave as if they were true. Indeed, we have no other choice.

The importance of beliefs in determining perceptions may be demonstrated in many ways. What you believe to be true will have much to do with what you hear me say. Witness the testimony at a court trial. Or look at a demonstration of magic. Adelbert Ames recognized this in creating his demonstrations in perception.[2,3] He built on people's beliefs and as a result developed some fascinating demonstrations. A rotating trapezoid, painted to look like a window, undergoes weird movements because the observer believes it is a window and not a trapezoid.

Values. A second order of perceptual determinants may be labeled values. For our use we may define a value as a belief about what is important. Ideas, people, material objects, a way of life, or other things may be valued. The requirement for a value is that it is something that is important to a person. Values have their influence on our perceptions. Numerous studies support this statement. Let us illustrate with one or two examples.

If words are flashed on a screen at such a rapid rate that they cannot be read and a person is asked to guess what the words are, his incorrect guesses will most often be in the direction of his values. A banker may guess "money," a preacher "virtue," and an educator "pupils." If then the speed of projection is slowed down until it is possible to discern some of the words, the first words a person can recognize are those which have high value for him.[4] It is probably true that problem-perception is easiest in areas wherein our values are present.

Needs. Another factor in the formation of perceptions is need. According to the perceptual point of view there is but one need which may be broken into two parts. This is the need to maintain or enhance self-organization as has been stated earlier. At one level our need is physiological—need for things such as food, water, air and shelter. But food and shelter may be used for more than maintenance. A boy may eat to grow big and strong. Adults may use their shelter for social status and regard from others. This second level of need is for enhancement

[2] W. H. Ittleson. *The Ames Demonstrations in Perception.* Princeton: Princeton University Press, 1952.

[3] Film: "Demonstrations in Perception." Navy No. 17N7367. Washington, D.C.: Bureau of Medicine and Surgery, Navy Department.

[4] L. Postman and others. "Personal Values as Selective Factors in Perception." *Journal of Abnormal and Social Psychology* 43:142-54; 1948.

of self-organization. The needs that have generally been listed as social needs—need for approval and acceptance, need for status or prestige, and need for power—most likely are needs that can be subsumed under the need for enhancement of self-organization.

We need say little here about the importance of need in determining perception. Did you ever try to study when you were thirsty or hungry? Check yourself the next time you are on a trip. Do you find that you notice restaurant signs more frequently when you are hungry? When you are tired, do you see the motel signs?

Attitudes. Still another factor is that of attitude. Attitudes are a type of belief and they also resemble values, but they are important enough to warrant separate consideration. Roughly speaking, an attitude is an emotionalized belief usually about the worth or lack of worth of something or somebody. It is probably not necessary to labor the point of the importance of attitudes in perception. We have all seen the importance of attitudes of students toward what is being taught and how these attitudes influence their perceptions and behavior.[5]

Self-experience. Under self-experience we can include several categories of perceptual determinants. Of primary concern and importance in this group is that which has been called the self concept. By this term we mean the self-perceptions of a person—how he sees himself, how he feels about being this sort of person, and how he would like to be. Also included in the category are the person's role concepts—his concepts of the roles he plays, how he feels about these, and his ideal role concepts. In addition, we may include his concepts of other people —how he sees them, how he feels about them, and how he thinks they see him.

One very important aspect of the self concept is its relation to our beliefs about how other people see themselves. On this basis we can distinguish four groups of people: ++ who like themselves and who believe that other people like themselves at least equally as much; −+ who do not like themselves in varying degrees and who believe that other people like themselves more than they; +− who like themselves but who question if other people like themselves as much; and −− who do not like themselves and who believe that other people don't either. If this is confusing to you, just remember that the first of the two signs refers to feelings about self and the second sign refers to feelings about other people. In a high school or college population, we find

[5] R. E. Bills. "The Effect of a Value on Learning." *Journal of Personality* 21:217-22; 1952.

about 30 percent ++, 30 percent −+, 30 percent +−, and somewhat less than 10 percent −−. The − − group is virtually absent in teachers and educational administrators. How we like or dislike ourselves is probably intimately related to our notions of our worth and the worth of other people.

The foregoing factors are probably primary in importance in determining perceptions. It seems as if the self concept acts as a set or a screen through which all other perceptions are formed. Let us illustrate, with research, the significance of some of these variables.[6]

Suppose we were to ask you to introduce yourselves at "random" to the other members of a group. We know that those of you who are ++ or +− will be among the first to volunteer and those of you who are −+ will be last.

Suppose we say to you, "All people at some time or other have been unhappy. This is not to mean that you are unhappy people but that you have experienced unhappiness." And suppose then we ask you to list the times you can recall being unhappy. Following this we can ask you, "Who or what was responsible for this unhappiness?" We can predict that the ++ people will list relatively few instances of unhappiness for which they, other people, and circumstances were responsible. The −+ people will list the greatest number of incidents, and they will believe it has been their own inadequacy or inferiority which was responsible. The +− people, though, list the smallest number of incidents and the blame is externalized—other people or situations were responsible.

The goals and ideals of a person are measurably influenced by perceptions of self and others. This is clear from the descriptions of self, ideal self, and the ordinary person. The ++ person says in effect, "I am quite like I want to be. I am also quite like other people, and what I desire is to be like other people." The −+, though, says "I am not like I want to be. Neither am I like other people. But I would like to be like other people." The +− is quite different. He says, "I am very much like what I want to be. I am not like other people, nor do I want to be like other people."

These perceptions also influence our evaluations of our performances. When the ++ is asked to evaluate his performance, he is quite realistic in his estimate. The −+ usually underestimates his performance while the +− overestimates.

[6] R. E. Bills. *About People and Teaching* Lexington: Bureau of School Service, University of Kentucky, 1956.

These same characteristics have proved important in a recent study by Moss and Owen of students who take the reading improvement course at Alabama Polytechnic Institute.[7] The source of referral of −+ students is usually themselves and for the reason that they believe their reading ability is inadequate. The ++ student is also a self-referral but because he desires to improve, not because he believes he is seriously deficient in reading. Most of the +− students have been referred by their deans or advisors or the Office of Student Affairs. These people believe they really do not need the course. This same situation holds when students are first tested on reading ability as shown by Godfrey.[8] Serious underestimation is given by −+ people while +− students overestimate their ability.

Accuracy of perceptions as described above is not limited to the problem of estimates of performance or ability. When perception of object forms is examined, using as a criterion the perceptions of large numbers of people, extreme differences appear. Our −+ subjects are highly accurate—in fact, compulsively so. Subjects who are +−, on the other hand, are quite inaccurate; and ++ people are accurate without being compelled to be completely so. The −+ person has difficulty in being inaccurate, while the +− cannot seem to be accurate. We can visualize the effects this has on creativity and imagination.

The language of these three groups also shows the perceptual differences which are present. We can use comparative adjectives for purposes of illustration. The ++ person uses few comparative adjectives. He seems content to accept things as they seem to be. Both the −+ and the +− use many comparative adjectives, although these are expressed in different directions. The −+ is concerned with his present status in respect to his past or future status or the status of other people. The +− makes comparisons which do not involve himself. Instead he compares this person with that one or a person with what he should be.[9]

Perceptions of self and others have been investigated extensively elsewhere, and there is probably no need of our offering an extensive review here. The reader is probably willing to concede that these are important variables in determining behavior.

Threat. Another highly important factor in perception is that of threat. For our purposes, threat may be defined as the perception of an

[7] H. Moss and Annie S. Owen. Unpublished data. Auburn: Alabama Polytechnic Institute, 1958.

[8] H. Godfrey. Unpublished data. Auburn: Alabama Polytechnic Institute, 1958.

[9] R. E. Bills, *op. cit.*

imposed force requiring a change in behavior, values, or beliefs. One of the greatest threats to people is a requirement of changed behavior when beliefs, values, needs, etc., remain unchanged. In other words, we are most threatened when we are forced to change the ways in which we seek for maintenance or enhancement of self-organization.

Threat causes defensiveness of behavior and a narrowing and constricting of the perceptual field. Under threat we seek to maintain, not to enhance or grow. We concentrate on the safe and secure, the tried and true. We engage in unimportant but safe behavior. Imagination, initiative and creativity are destroyed.

The importance of our reactions to threat has been emphasized by Rogers in a recent statement in which he sketches a seven-point continuum from closedness to openness to new experience.[10] Openness to new experience is a requisite for being a fully functioning person—a term to be preferred over the static concept of adjustment. Elsewhere Rogers stresses the defensiveness of the person who is closed to his experience.[11] Such a person is concerned with problems external to himself. He himself has no problems; they exist "out there." This person usually concentrates on peripheral issues rather than on the central core of a problem. The administrator whose primary concerns are the lunchroom, attendance records, and discipline problems rather than supervision of instruction, curriculum development, and the development of boys and girls, may be such a person. The closed person has negative attitudes toward new things and toward people. He is more concerned with status than with enhancement. He is usually unaware of his own true feelings. You may recognize him as the +− person we have already discussed and to a lesser degree as the −+ person.

These, then, appear to be some of the more important determinants of our perceptions and, through perceptions, of our behavior. What do they imply for classroom learning?

Implications for Learning

The implications of perceptual theory for education are numerous. An exhaustive review would require more space than is available. Let us simply list a few of these implications:

[10] C. R. Rogers. "A Process Conception of Psychotherapy." Unpublished paper. Madison: University of Wisconsin, 1957.

[11] C. R. Rogers. "A Theory of Therapy, Personality, and Interpersonal Relationships, as Developed in the Client-Centered Framework." Unpublished paper. Chicago: University of Chicago, 1955.

1. To teach a person we must understand him. This is most easily accomplished by trying to see him and his world as he sees them.

2. Education must start with problems of learners that are important and need-relevant to them.

3. Since needs, values and attitudes are such important determiners of perception, education must seek to help students know what needs, values and attitudes are important to them and to consider these fully and in relation to each other.

4. Since personal perceptions are not readily changed through the introduction of objective evidence, education must begin with the beliefs of students and relate knowledge to their peculiar perceptions.

5. Perceptions are most readily changed through a reexamination of needs, values, attitudes and the possible meanings of previous experience.

6. Knowledge is but one determiner of human behavior.

7. Learners learn in response to *their* needs and perceptions, not those of their teachers.

8. Education must start where the child is and permit him to determine his own direction and pace.

9. Not specific behavior but adequacy of perception and openness to experience should be the goals of education.

Obviously, there are other implications to be derived from this theory, but these should suffice to help us move forward in our thinking.

For clarity it would probably be helpful to recapitulate. From the many possible outcomes of human relations we have chosen a purpose which is open-ended. It may be contrasted with alternatives which seek to produce people with set patterns of behavior, ready to respond in ways predetermined by a person or persons other than the behaver. This purpose is opposed to indoctrination, rigidity of habit patterns, and inculcation. The purpose, and I might state it as the purpose of education which I can accept, is to produce a person who is able to respond in any direction dependent only on his broad perception of the situation, his ability to perceive without distortion and defensiveness, and the limitations set by his organic structure. This is a fully functioning person.

This purpose for education rests squarely on the assumptions that behavior is a function of perception, that man is self-actualizing, and that his primary need is to maintain and enhance self-organization. We behave as we perceive. We are capable of initiating action, and the direction of our action depends on our views of how we can best maintain or enhance ourselves.

We are now ready for our next question. Can we achieve this

purpose for education and produce fully functioning people under all conditions of organization?

Conditions of Positive Change in Perceptions

Obviously, all ways of organizing to teach will not satisfy the implications of perceptual theory nor enable students to become fully functioning people. Teacher-dominated instruction, lectures out of relation to learners' needs, and courses taught exclusively for their "cultural" value have not proved especially useful in reaching our objectives.[12] However, certain other methods have proved to be efficacious. These include problem-solving approaches, group dynamics, and more especially student-centered teaching. Although the methods of organizing are important, we probably can be most helpful here by suggesting the conditions which seem both necessary and sufficient for promoting positive changes in perceptions.

Recently, Rogers has suggested the necessary and sufficient conditions of therapeutic personality change.[13] These conditions are being subjected to experimental validation at the present time by G. T. Barrett-Lennard of the Alabama Polytechnic Institute. Perhaps we should discuss them briefly here since in another sense they might also be considered the necessary and sufficient conditions for producing fully functioning people in our educational settings.

These conditions rest firmly on the assumptions we outlined earlier. Behavior is a function of perception. People are capable of self-actualization. And people strive to maintain or enhance self-organization. If these assumptions have validity, then it is the responsibility of the therapist, the administrator, the leader, or the teacher to provide the conditions which are necessary to allow them to operate. This, in general, has been the primary effort of the student-centered teacher.

These, then, are the conditions, paraphrased and somewhat elaborated:

1. Two persons are in psychological contact. These may be therapist and client, teacher and administrator, or student and teacher.

2. The first of these people—the client or the student—is in a state of incongruence, being vulnerable or anxious or desirous of learning or changing.

[12] P. E. Jacob. *Changing Values in College*. New York: Harper and Brothers, 1957.

[13] C. R. Rogers. "The Necessary and Sufficient Conditions of Therapeutic Personality Change." *Journal of Consulting Psychology* 21:95-103; 1957.

3. The second person—the therapist, the administrator, or the teacher —is congruent or integrated in the relationship.

4. The therapist or teacher or administrator experiences unconditional positive regard for the client or student.

5. The teacher, therapist, or administrator experiences an empathic understanding of the client's or student's internal frame of reference and endeavors to communicate his experience to the client or student.

6. The communication to the client or to the student of the therapist's or teacher's empathic understanding and unconditional positive regard is to a minimal degree achieved.

Under these conditions students become more open to their experience and move toward becoming fully functioning people.

Relevance to Education

Although it is somewhat aside from our present purpose, I cannot resist the urge to mention the relevance of these concepts to education in a time of hysteria and defensiveness. Soviet Russia is seen today as an important other. And it is not seen to be accepting of us. In fact, the opposite appears to be true. Naturally, we react defensively. The professional critics of education, among others, are stressing a purpose for education which through its narrowness threatens our potential more than does Russia at this moment. If followed, most of the solutions to our supposedly vulnerable position would turn education into technical training. We would perceive more and more narrowly and be less able to make the most adequate responses. If we are to meet the challenge, we must consider all of the factors in behavior and not information or technical skill alone. Please do not misunderstand me. I am not talking against the need for knowledge and skill, only for a recognition that these are but a part of our behavioral determiners and must be seen in this light.

One other thought. The solutions to the present "problem" have ignored the question, "Where is the learner in this process?" Sometimes I think my children have their feet more firmly on the ground. The other night our eleven-year-old daughter asked if there might be a six-day school week. Her teacher had mentioned the possibility. I told her that some people had suggested it. She thought for a moment and said, "If they do, Daddy, the kids won't want to go and the teachers won't."

An answer to the critics is that we cannot afford a narrow education nor can we ignore the learner as we devise plans.

Research Related to Perceptual Theory

Most of man's ways of organizing to work with his fellow man have been based on different assumptions and for a different sort of purpose than that suggested by perceptual theory. Throughout history we have organized with hierarchical structures dependent on a valuing of the worth of people along lines of social status, intelligence, power, prestige, seniority, or knowledge. We place those whom we value most in a position to direct the lives of the rest of us. For this reason alone, we would expect relatively little research to be available from a point of view that leans heavily on the worth of individuals and their capacity to be responsible for their own destinies. And this is true. Still, there seems never to have been a period during the history of research on educational problems when such research was entirely absent.

During the past 15 years, research from a perceptual point of view (not always labeled as such, but certainly consistent with it) has greatly accelerated. The reader is probably somewhat familiar with work at the Counseling Center of the University of Chicago in areas such as client-centered therapy, group-centered leadership and administration, group-centered therapy, child-centered therapy, and student-centered teaching. I will not attempt to summarize this work here as it is reported elsewhere. Much additional work has been done in the area of student-centered teaching which has also been summarized elsewhere.

Instead of attempting a survey of these areas, I wish to report on two new research projects which have been completed. In so doing, I hope that you will see how the purpose suggested earlier may be sought and the assumptions allowed to operate. Furthermore, you may hear about some of the tools which are being used in research in perceptual theory as it applies to the classroom.

But before we look at these studies, let us raise an additional question. What is the purpose of research? It may surprise the reader to hear this question raised, although I feel certain that, with their interest in action research, readers of this booklet will be less surprised than are many other people. The answer that is usually given is "for discovery." But this is not the only possible answer. The answer "for discovery" is probably more appropriate within a fairly static frame of reference, for instance, that which is used in observing physical events. Even there, however, it is not always an appropriate one since even the physical frame of reference changes, sometimes with dramatic speed.

Research can also be a method of creation. For example, it may be used to create new relationships among people. Those readers who

have engaged in action research will probably recognize the validity of this statement for themselves.

Similarly, research can be a method for learning. I do not refer here to the learning of research methodology as an end but to the use of research in problem-solving activity as a primary tool for learning.

And an even more important purpose for research is as a means of testing our efforts at implementation of theoretical objectives. For example, we have stated the theoretical objectives of perceptual psychology, its implications for education, and the conditions under which we may achieve our goals. Now we come to the question, "Will this way of teaching secure these ends for us?" Research is an invaluable tool for such evaluation.

The research reported in the following sections has been done for purposes of creation, promotion of learning, and evaluation of the conditions of the learning situations.

An Experiment in Teaching Educational Administration

After much preliminary research by an interdisciplinary team at the University of Kentucky, Eckel modified his teaching approach to be consistent with perceptual theory. In thinking through the problem, Eckel stated:

> If our beliefs were to be tested adequately, a group would need time to work together closely and intensively. Participants would need ample opportunity to grow close together, to understand the problems and needs of one another, and to feel close enough to others so that personal and professional problems could be easily shared. We doubted if this experiment could be meaningful if other types of activities, such as other college classes, competed for the participant's time. It seemed best to organize the experiment so that students could spend full time with this project.[14]

All majors in educational administration were given a chance to enroll in the group and to take two of the three courses required of majors. Twenty-one people selected the experience, which has been designated "block-of-time" teaching. They met as a group four hours each morning and as a group or as committees at other times.

The content used in the experimental program consisted of the problems, needs, and interests of the group members. Members were free

[14] H. Eckel. *An Experiment in Teaching Educational Administration*. Lexington: Bureau of School Service, University of Kentucky, 1955.

to select both personal and professional problems which concerned them and to use materials, resources, and processes of their own choosing for solving these problems. Since they were educators, they tended to settle either on problems closely related to education or personal problems directly influencing their effectiveness as teachers and administrators. There was no attempt to bring to the class any type of organized content concerning the skills and knowledge needed by educational administrators. The instructor made a few suggestions concerning what he believed should be essential, but he did not place value judgments on what members of the group believed essential. It was believed important that the group build its direction on its own problems rather than those which they believed represented the interests of the teacher.[18]

Eckel goes on to describe the climate of the teaching and to describe further the group activities. You may find his report of interest. For our purpose it is sufficient to say that a threat-free climate characterized by permissiveness and acceptance of the individual was developed. The group talked, studied, discussed, and played together. They ate breakfast and lunch together. They took field trips and invited in 23 resource people. More can be said about the nature of the class, but we can summarize to say there was great concern for the variables and assumptions of perceptual theory.

Now for the research aspect. The 21 people in the experimental group were matched with a control group representing educational administration majors who were taking the courses as separate classes. As far as could be determined, the experimental and control groups were similar at the beginning of the summer in terms of number, sex, prior education, age, knowledge of administration and supervision, and attitude toward self and others. A standardized test of facts and concepts was used to measure knowledge of administration and supervision, and attitudes toward self and others were measured by the Index of Adjustment and Values.

Other measures were used in the experiment, including 15-minute recorded and transcribed open-ended interviews at the beginning and end of the experiment, anonymous student evaluations at the end, a follow-up letter four months later, and another interview one year later. Attitudes toward the experience were judged from the transcriptions of the interviews.

Students learned about the same content in both the experimental and control groups, but here the similarity ended. The experimental group showed a statistically significant gain in acceptance of self and

[18] *Ibid.*

others; the control group showed a slight loss. The experimental group held highly favorable attitudes toward their experience; the control group was neutral to cool. The experimental group believed that they had an exciting opportunity; the control group thought it was good. The follow-up data seem to indicate strongly that the experience had a lasting effect which significantly influenced the educational practices of the members of the experimental group.

Subsequent to this experiment, block-of-time teaching has been introduced as a regular part of the program in the Department of Educational Administration. All members of the staff have taken part and seem to have profited from the experience. The program has undergone two additional research evaluations, both tending to support the research reported above. In subsequent studies, other tools have been used, including Q-sort measures of self perceptions, perceptions of leadership roles, and the purposes of education. Likewise, some use has been made of a recently developed measure called the semantic differential.[16]

An Experiment in Teaching

A more recent study has been completed at the Alabama Polytechnic Institute.[17] Here, again, perceptual theory was the basis but research was used as a method of instruction as well as for evaluation. The instructors of three classes designated as Techniques of Administration, Problems of Administration, and Advanced Social Psychology were interested in providing an experience in which perceptual variables could change in a desirable direction. How could we teach so that students would become producers as well as consumers of knowledge? How could we teach so there would be a direct relationship between what was learned and the job experiences which would follow?

We met our classes as individual instructors. The classes consisted of graduate students who were teachers, administrators, and prospective psychologists. One of the classes met twice a week in the late afternoon and two met in the evening. We asked the students, "What are your primary concerns and problems on your job and in achieving an education?" And they told us. They had a variety of concerns and problems—all of them related to human relations, social change, and problems

[16] C. E. Osgood. *The Measurement of Meaning*. Urbana: University of Illinois Press, 1957.

[17] R. E. Bills and others. "An Experiment in Teaching." Mimeographed. Auburn: Alabama Polytechnic Institute, 1958.

of teaching. As we listened, it seemed to us that their problems were encompassed by a sketchily developed theory of personal development and social change called the "Spirals of Change." [18] When we saw this, we asked the students, "Would you like to know more about the concerns of your instructors and about the Spirals of Change?" Since their answer was in the affirmative, all three classes met as a group for an evening session. In this session, it was decided that we would work on research projects, both action and experimental, to further our learning and to contribute to the development of our understanding of the Spirals.

We returned, then, to our classes and developed our projects. One class settled on a class project—an investigation of the authority figures teachers use in making their decisions. This class hypothesized that teachers have authority figures characterized by three dimensions—distance from self, how the figures are used, and their selection in reference to specific problems. Considerations of theory, research design, data collection, and analysis of data accounted for most of the time of this and of the other two classes.

Another class worked on the development of two instruments for measuring school potential for improvement. It was hoped that these instruments might be used by schools for their own self-improvement. These instruments were called an "Index of School Improvement Potential" and an "Index of School Status and Aspirations."

The other class developed 11 projects. This was the largest of the three classes, but it differed also in the adoption of individual as well as group projects. One student was interested in the effects of a three and one-half weeks' training course on the qualities of military instructors. Two students studied the relationship between attitudes of high school teachers toward themselves and other people and these same attitudes in members of the senior class. One student, a guidance teacher, attempted to become a more proficient group therapist. To do this he organized discussion groups in his school and pre- and post-tested to see the effects of the discussions. Another student, a 12-grade principal, took as his project the formation of honor study halls to relieve a teacher shortage. His success makes an interesting story in itself. Still another student took as his project the measurement of student attitudes toward and gains from a mental hygiene class taught by a student-centered method.

[18] "Spirals of Change." Committee report from Regional Research and Leadership Development Program. Atlanta: Southern Education Foundation, 1957.

Another interesting study was that of the role concepts of teachers with numerous discipline problems as contrasted with those of teachers with few discipline problems.

The studies we have sketched may give the reader an idea of what the students worked on, and from this you may infer the meaning of the projects to the students and the interest that was present. Let us spend a few moments on how we evaluated student change.

At the time of the decision to work on projects, we pointed out to the classes the unique nature of this method of teaching and asked the students if they would be willing to be tested so that we might have a better idea of what happened to them. This they agreed to do and an anonymous testing program was begun. In it we used Q-sort measures of outcomes and self descriptions, and the Index of Adjustment and Values.[19] The outcomes Q-sort was one structured to enable students to describe the outcomes they desired in terms of skill, knowledge, or attitudes about research, theory, people, and purpose. The self-descriptive Q-sort was used to obtain pictures of the self, the ideal self, and the ordinary person.

Students were re-tested with these devices at the end of the quarter. At this time, the outcomes sort was used to describe both the outcomes they now desired and those they believed they had obtained.

What did we find? Briefly this: During the quarter, students increased in their self-acceptance and in their perceptions of how other people accept themselves by a statistically significant degree. Furthermore, they moved toward being like their ideals; and they felt they were much more like other people and were glad of it.

From the outcomes sort, we found that a significant shift had occurred. What they obtained was significantly related to what they had desired at the onset of the course. What the students desired at the end of the course was also significantly related to what they had desired at the beginning. However, a significant shift had taken place in their desires. At the end, they desired more the type of outcome they had achieved. The greatest change occurred in relation to research and the next greatest in respect to people. Both of these sorts of items were given higher ratings at the end of the course than at the beginning.

One final note in regard to this project. We had intended to test the instructors and to attempt to relate student change to our characteristics. For one reason or another, we did little of this. If we

[19] R. E. Bills. *A Manual for the Index of Adjustment and Values.* Mimeographed. Auburn: Alabama Polytechnic Institute, 1957.

were to repeat the project, I believe we would make a greater effort in this respect.

In our limited space, I cannot mention the many projects in progress from this point of view. I am certain we could gain much from the studies now in progress at Florida, Chicago, Texas, Columbia, Illinois, and elsewhere. Perhaps the few studies we have cited will help the reader, though, to understand how it is possible to implement the theoretical discussion given earlier in this paper.

Some Available Tools

Perhaps we should mention some of the many techniques which recently have been developed for research in this area. Of our tools, the most versatile is Q-methodology.[20] Q can be used to quantify and objectify any verbal description. Many different Q-sorts are available, including descriptions of leadership behavior, membership behavior, self, purposes of education, traits and abilities of administrators, teacher role concepts, problems of practice teachers, adolescents' self concepts, and supervisory practices. For most of these sorts, criteria are available.

Quantifiable measures of self concept, acceptance of self and others, and perceptions of how other people accept themselves are also available through the work of Burger,[21] Phillips,[22] and Brownfain.[23] Our Index of Adjustment and Values has been extended; forms are now available for grades 3, 4, and 5; 6, 7, and 8; 9, 10, and 11; and for grade 12 and above.

We should also list the ingenious devices produced by Fiedler and his co-workers in their studies of leadership at Illinois[24] and devices such as the Principal's Behavior Check List developed at Florida. We have already mentioned the Semantic Differential developed at Illinois by Osgood.

[20] W. Stephenson. *The Study of Behavior: Q-technique and Its Methodology*. Chicago: University of Chicago Press, 1953.

[21] E. M. Burger. "The Relation Between Expressed Acceptance of Self and Expressed Acceptance of Others." *Journal of Abnormal and Social Psychology* 47: 778-82; 1953.

[22] E. L. Phillips. "Attitudes Toward Self and Others: A Brief Questionnaire Report." *Journal of Consulting Psychology* 15: 79-81; 1951.

[23] J. J. Brownfain. "Stability of the Self-concept as a Dimension of Personality." *Journal of Abnormal and Social Psychology* 47: 597-606; 1952.

[24] F. Fiedler. *Leader Attitudes and Group Effectiveness*. Urbana: University of Illinois Press, 1957.

So many new devices are now available that entirely new research areas are open to us.

Much more could be said about perceptual theory and its educational implications and about research within this area. Perhaps we have been able to give you a glimpse at perceptual theory and its implications, the research methods and tools which are applicable to it, and the ways in which these have been applied. More especially I hope I have been able to illustrate the use of research as a method of testing hypotheses and as a method of teaching.

A Look Ahead . . .

How To Learn More About Learning[1] / *The Institute Staff*

"We have not probed the depths of learning." This statement, underlined in one of the early reports from discussion groups trying to assess the significance of the ideas presented by the scholars, was representative of the first and most predictable reaction of participants in the Institute.

For the first intention of the Institute was to stimulate thinking by drawing upon the new findings of related disciplines. Certainly, as we heard what these four scholars had to say to us, we were all impressed with how much there is yet to be found about learning. We began to see anew the unexplored possibilities in the field of how children make the world their own.

But then we began to ask ourselves a long series of questions: If these things are true, what do they mean for us? How can we test some of these ideas? What kinds of changes would help us do a better job, in terms of these new insights? How can I make use of some of this material with the groups in which I am now working? And so on.

These questions were also predictable. Our second major purpose in the Institute was to help get these questions stated—and to give as much assistance as we could to the working through of some possible problems for further study and research. In one of the opening sessions, William M. Alexander had urged participants to keep the prospects of action before them throughout the Institute, not only in terms of their own role in their immediate environment but also as members of an Association pledged to the opening up of new concerns at the national level.

[1] This section is based on statements, reports and notes made by the Institute staff as indicated in the pages to follow and was compiled for the staff by Alexander Frazier, chairman of the Institute.

So it was that while much of the time of the Institute was devoted to extending the ideas of the scholars, we also spent many hours in trying to formulate these ideas into problems that could be studied in our own situation—local, state or national. We were trying for new horizons. Out of all this stimulation, we were hoping to come to better answers for the central question: What most needs to be studied in the field of learning?

This accounts for our attempt as a staff to report in this final section some of the aspects of learning that participants defined, however roughly, as worth working on. Our hope is that these ideas may help others as they make their own search for significance in the preceding scholarly papers.

Ideas and Implications

Our own search for meaning during the Institute took several forms. At one point, after the presentation of the first three scholarly papers, we decided to spend some time in assessing what we called the "big ideas" and their implications. Small groups were organized to have a look at two questions: What has struck us as significant? What do we see as possible implications for education?

Following is the kind of statement about significance that we made to ourselves. This particular excerpt came from our reaction to the Bills' paper on perceptual psychology:

If growth involves freeing the child to learn, then the teacher's role is more than that of a stimulator.

If it is true that learning is an internal process, then the teachers must be concerned with more than content and arrangement of the environment.

Are teachers translating assumptions they verbalize into their own behavior? If not, what are the pressures that keep them from doing so?

A problem of providing a safe and challenging environment: this may be different for different children.

When a pupil is forced to learn something he can't accept as a goal, he may also be learning: (a) that he is no good and (b) that the school is an unpleasant place.

In order to change behavior, we have to change the perceptions that teachers have of pupils and people—and perhaps of themselves.

Of the implications of ideas such as these, we asked certain questions:

How do teachers see their role?

If the teacher needs to work on self to reduce threat, how is this done?

How do we work on the self concept?

What kinds of instruments do we need in order to understand better the behavior of people?

How can teachers help defeated children get experiences that build up faith in and respect for themselves?

The report of this session was returned to the participants for use during subsequent attempts to make the search concrete.

In general, we had agreed that this first effort had failed to help us dig in as deeply as we felt we should in defining problems worthy of further study and research. Therefore, in planning the final day of the Institute, we sought to set the scene for greater specificity.

The result was that, under the leadership of Alice Miel, the participants identified four areas of concern that seemed to them to contain problems of major interest. These areas were: development of children's concepts, learning and evaluation, subcultures and threat, and teacher education. Groups organized around these topics met for the full morning of the final day.

Their reports as given here may be read as illustrative of the kind of use that can be made of the preceding scholarly papers. Obviously, in view of the shortness of time devoted to the final group sessions, the reports make no effort to define all the major aspects of the topic worthy of further study. If the reports serve to show how the papers can be used to stimulate thinking, they will have served their purpose.

The four group reports, together with a summary statement of research principles presented in the concluding session by Robert S. Fleming, form the remainder of this final section of the booklet.

Study of Children's Concepts[2]

Increased understanding about the role of perceptions in a pupil's ability to learn was undoubtedly a motivating factor in the plans proposed by this group for study of children's concepts. There seemed to be general agreement that a teacher's success in helping pupils learn is likely to be somewhat dependent on the extent to which he is able to place himself in the role of the learner and to "see" what the learner is "seeing."

There is reason, the group decided, to believe that the many expanded opportunities for learning available to today's children, as

[2] Reported by Jane Franseth, staff leader of the group.

compared with those of a decade or more ago, might mean that a much higher level of understanding of many kinds of problems and situations could generally be expected. The group recognized, however, that a wide range of levels of understanding in each age group could be anticipated.

There is also reason to believe that some children could be helped to understand certain concepts at an earlier age than was formerly thought possible. As examples, some members of the group reported on experiences they had had with young children in the development of concepts about time and space and also about number. A tentative judgment was that children's ability to understand rather complicated concepts has been underestimated.

There is reason to believe that some concepts held by many children are erroneous and confusing and that the experiences they are having do not help to increase their understanding of the world in which they live. Illustrations reported were chiefly in the area of relationships with others. For example, some children in a certain classroom thought "justice for all" meant "just us for all." One member of the group reported on a study under way dealing with children's concepts of God.

Thus, for various reasons, the members of this group did not find it difficult to assume that studies of children's concepts as they are today would be in order. The findings of such studies would be useful in helping determine what changes we need to make in the kinds and quality of learning experiences that we are helping to provide for the children with whom we work.

Some of the questions considered important in relation to studies of children's concepts were as follows:

Generally speaking, what concepts are children struggling with today in their attempts to understand the demands of living in a complicated society such as ours?

What are some of the concepts generally held by children today at various maturity levels? How did they learn them? On what maturity levels? Range of differences? What is the teacher's role and how performed?

What are the concepts of children today about time and space? About number? About the pledge to the flag? About justice and fair play? About democracy?

Are there levels of concept development? If so, what are they? Is there logic in sequences of meanings?

What is the difference between knowing about values and understanding values?

Can we find out about children's capacity for change in their perceptions? How?

What concepts do our children have of themselves? Of others?

In making studies about children's concepts, what variables need to be taken into account?

What research findings are available about children's concepts?

What might be the implications of our findings for learning?

With the help of the others, each member of the group explored ways in which he might initiate or take next steps in a study of concepts held by a group of his children back home. It was suggested that first attempts in such a study should probably be limited to a small number of children and that only the teachers most interested in testing themselves in this kind of research should be encouraged to undertake it. The studies proposed were as follows:

"Children's Concepts about Number" (Primary Grades—Milwaukee, Wisconsin)

"Children's Concepts about Time and Space" (Middle Grades—probably in a school near Washington, D.C.)

"Children's Thinking about God" (Some studies already under way—Weekday Religious Education, National Council of Churches, New York)

"A Study of Children's Concepts of Justice" (Grade 4, 5, or 6—Sioux Falls, South Dakota).

Time did not permit more than a brief consideration of a few methods of gathering evidence about children's concepts. Although some suggestions were made for collecting evidence for each of the concept areas listed, the focus of the group's attention was on the proposed study of children's concepts of "justice." Here are some of the methods of collecting data that were discussed.

Children could be asked to write what they think is meant by the words, "Justice for all."

Records could be kept of periodic observations of 10 or 15 minutes' duration. These would describe as accurately as possible what children are observed doing and/or are heard saying.

Children might be asked to participate in a sociodrama in which certain problem situations involving judgments about justice might be portrayed. Records of what they did might be kept.

A rating scale might be prepared in which children would be asked to indicate their judgments about certain behaviors exhibited by certain characters in a story or play.

A list of definitions might be prepared in which each child would be asked to check the ones he thinks most applicable to his understanding of what is meant by "justice."

It is evident, of course, that this report shows only a beginning as to ways in which studies of children's concepts might be made. It is anticipated, however, that each member of the group will find others back home who will be interested in joining or continuing in a co-operative effort to become better informed about some of the concepts their children hold, especially as these relate to the demands of today's world.

Learning How To Learn[3]

Before settling on a particular aspect of the problem area, members of the group working on learning and evaluation raised many questions that had occurred to them during the Institute. Some of these follow:

Is there a common structure in all learning?

How do we individualize teaching of the various subject skills?

How do we help children analyze how they learn?

How can teachers help children get a better understanding of the *how* and the *why* of things?

How can teachers facilitate cooperative evaluation in a manner that gives security?

How do we help children question their goals?

How do we involve children in goal setting?

In order to move into one of these areas toward the desired specificity, the group members were asked to concentrate upon the last question given above: How do we involve children in goal setting? The rest of the work period was spent in trying to develop practical suggestions for action as an example of how similar problems might be handled.

As they responded to the question of how to involve children in the process of goal setting, members of this group suggested a number of problems that seemed important to them. These ranged from concern about how to find out what learning an individual or a group already has, to the problem of how to help children identify what they consider as worth learning.

[3] Compiled from the notes of Robert S. Fleming, staff leader of the group.

With this background, the group turned to a closer examination of the terms in the question: "How do we involve children in goal setting?" Three words seemed to need definition, "we," "involve" and "goal." From the definitions by members came a new sense of the full meaning of the question, which was now restated as, "How can we as teachers learn to include children more effectively in the setting of group goals?"

The restatement served to sharpen up a series of subproblems. These were stated briefly as follows: How do we involve children in goal setting at present? From what sources do we draw alternative goals? How do we find out what the children's goals are? What are the teacher's goals in a given situation? What are the pupils' goals? Are the goals of teacher and pupils consistent?

A consideration of the concerns and feelings behind these questions caused the group members at this point to restate their central problem. The new statement seemed to the members almost to become a new problem: "What happens when we involve children in goal setting?"

As the group members analyzed what was happening in their exploration of the area, they felt they were moving toward a more functional analysis of the question with which the group had started. The group now was able to try stating a series of testable hypotheses related to its central question. A statement of these hypotheses was invited by the leader through his asking what hunches members might be able to think of in terms of "I bet you . . ."

Here, in conclusion, is a series of the "I bet you's" that came from this group: If you involve children in goal planning, then

. . . you will be able to leave the room for progressively longer periods of time and the pupils will continue working
. . . student and substitute teachers will adjust better
. . . children will make faster progress
. . . many more children will have similar goals
. . . teachers will change in attitudes toward children and toward other teachers
. . . more children will make new friends
. . . a wider variety of materials will be used
. . . the teacher will enjoy teaching more
. . . more teachers will want to continue in teaching.

What this group had done was to move, however rapidly, through the initial phases of the process of problem definition toward a beginning statement of a researchable thesis in the field of learning.

Subcultures and Threat in Learning[4]

The group on subcultures and threat in learning focused its attention on the question of how subcultural or class differences are related to self perception; goal setting (family expectations as a factor); moral and ethical decisions involved in deliberate school efforts to change a child's values; differences in the subcultural or class values of teachers and pupils; and teachers' perceptions and expectations of children in relationship to the children's self concepts.

One problem area of considerable interest to the group centered around the adolescent. Does the teen-ager have a "subculture"? Is there a specific period in the natural growth pattern when the culture makes peers especially important or is this a unique aspect of the American culture? Other subcultural groups mentioned by members were racial, ethnic, occupational, lingual, and geographical in nature.

In further discussion, the group identified a number of potential sources of threat to children, particularly to children from subcultures other than the dominant ones. Report cards, tests and grades—may the report card symbolize a whole cluster of threatening experiences? "Togetherness"—can this be perceived as threatening to certain children? What does this concept mean at various stages of maturation? The concept of fixed standards was also questioned, again with reference to testing. The problem of securing stability in school situations in the face of all that is known about pupil mobility was also underlined. The group mentioned, too, the threat that might arise from the lock-step of grade placement of concepts and materials. Another center of anxiety may well be the differences between the ideas parents and teachers have of "what school is."

When the group went on to try to develop some hypotheses for testing, members found that limitations of time stood in the way of their working out new hypotheses to their satisfaction. Therefore, they drew on the experience of one of the teams in the group, the principals from Ferndale, Michigan, where the problem of threats to learning is already under study. The three schools so concerned, with varied faculties and interests, have drawn several hypotheses:

The more a teacher perceives the traditional practices of grading, using report cards, etc., as a part of "a good school program," the more threats there will be for pupils.

The nearer together the perceptions of members of a faculty are on the nature of a "good school program," the less threat there will be for pupils.

[4] Reported by Rodney Tillman, staff leader of the group.

Looking at the threats to learning within a school may encourage teachers to re-evaluate some of their practices and ways of working toward greater effectiveness.

From a discussion of these and similar hypotheses, the group agreed that it was important for teachers to understand the ways in which different subcultures and classes may affect goals. The group also felt that teachers may need more help than they have had in devising ways of discovering those things in a culture that do affect goals. Another point of agreement in the group was that if pupils with little motivation can see themselves as persons who are able to succeed at learning, then they will achieve more. This proposal for study came from the concern of a school psychologist who had expressed a need for assistance in helping the defeated pupil—often a pupil out of step, a low achiever, etc.—to realize some measure of success.

The final activity of this group was to return to the Ferndale studies with a look at the kinds of evidence or ways of collecting it that might be appropriate. Among the devices listed were questionnaires, to be used with pupils, parents and teachers; observations for which the team has already drawn up tentative criteria of validity; data available in present school records; autobiographies; and a variety of instruments especially prepared for the studies. Individual therapy and group therapy were also mentioned, both as ways of possibly resolving some of the threats and also of identifying points of concern for a school staff.

Problems in Teacher Education[5]

The group on teacher education aimed its discussion at the definition of a series of problems that seem in need of study.

However, on the way, the group dealt with a variety of topics related to the material presented in the Institute. Early in the discussion, one of the important points raised was the idea that most research we have available has to do with understanding children from some outsider's point of view. We need a great deal more attention to understanding children from the new point of view, the group decided, which means that we need a lot more research on child perceptions.

Some persons in the group raised the question of how they could go home and most effectively use what they had learned of perceptual theory. In discussing this problem, various members pointed out that we ought not to return home waving a flag but should each fit his

[5] Reported by Arthur W. Combs, staff leader of the group.

own behavior into a careful assessment of the situation in such a way that we do not threaten the existing structures. The main question seemed to be how to make most effective use of ourselves in carrying back some of the ideas developed in the Institute.

This emphasis on the use of self led into the question of whether it might be possible for an individual to become too self analytical. The point was made that this could very well occur when one placed the emphasis on changing one's behavior. The group decided that self improvement could best be brought about not by criticizing and assessing our behavior but rather through attempting to explore and discover our own ways of perceiving on the theory that when we perceive differently, we will also behave differently. In other words, the best way to make changes in self is not to attempt to work directly on the self but to work on problems.

The group then explored the differences between the self concept and the self report. The self concept, it decided, is what a person *thinks* he is. The self report, on the other hand, is what a person *says* he is. The point was made that it is only when people feel safe that they can deal effectively with their self concepts. Further discussion led to the question of how a leader can create situations that make it possible for people to let down their usual defenses. It was agreed that if people are really threatened, this may become a very long drawn out process. In reducing threat and making personal discussions possible, it was suggested that: (a) The leader must be willing to reveal something of himself; (b) The group must be permitted to work on whatever level it feels it must work before it can move to some other level; and (c) The kinds of levels in which the group was able to operate were the product of the way in which the leader worked with the group; hence, the leader deserves whatever level his group operates on.

The point was also made in the group that apparently perceptual approaches to psychology mean that a teacher is a kind of person rather than simply a technician and that, therefore, a strictly methods approach to trying to teach teachers would be unlikely to succeed. Rather than telling teachers what they need to do and sending them forth, we need, instead, to help young teachers in preparation to explore their personal beliefs with the idea that as these beliefs change, their behavior will change also. The group felt that a teacher needs help in exploring these areas: (a) his beliefs about what people are like; (b) his beliefs about what it is that schools are trying to do; (c) the acquisition of a set of methods which suit his particular personality and purposes; and (d) the personal discovery of his own self.

Finally, the group defined the following problems and hypotheses as being of possible worth for exploration by persons in the field of teacher education:

What happens when the trainee and the supervisor are given more time in a larger block? The group felt the idea might be explored of having teachers-in-training and their supervisors work closely together over the entire period of their preparation, rather than in a number of separate courses as is usually done in most places at the present time.

How might we go about getting new information from areas related to education more rapidly into the stream of action in the various teacher education institutions?

Are there ways of teaching that help to improve the self concept? What is the relationship of method to the development of better self concepts?

How can we create a classroom atmosphere that will make it possible for communication to occur on deeper levels? How can we help teachers in preparation to find those peculiar and personal methods of group leadership that they can use most effectively and that will help the groups they work with to explore perceptions and personal meanings as well as cold facts or events?

If discovery of one's own methods is an individual matter, how do we help people to discover these in the course of teacher preparation?

What research can we carry on that would explore the problem of teacher education in the light of our definition of the good teacher as resulting from clarification of these aspects of perception: (a) What are people like? (b) What are schools trying to do? (c) What methods are appropriate for me? and (d) What am I like (personal discovery of self)?

How can we go about getting at the needed research on the perceptions of parents in regard to the school?

How can we find out what our preparation program looks like when seen through the eyes of the trainees? We need, also, to take a good look at our programs in respect to the amount of rigor which they contain. Some of those in the group felt we need to find out whether teacher education is really getting "soft."

How can we develop instruments or techniques for exploring the self concepts of children and how can we relate the teacher's self concepts to the effects these have upon children?

How can we set up research to explore the teacher's concept of himself and his role as a teacher?

How can we test the assumption that these are valid criteria of good methods: whether they are good for children, whether they are something the teacher can use, and whether they are consistent with the situation with which the teacher is confronted?

Help on Research Methodology[6]

The concluding session of the Institute, as was previously indicated, was devoted to a review of research methodology. In thinking about methodology, it may be well to give attention to some of the assumptions behind our interest in curriculum research that we need to keep in mind.

We believe that:

Curriculum workers need to make greater use of research findings and activities.

Changes in our society are continually under way; these changes have implications for the curriculum. Many of our current practices are based on research carried on in the past which may not now be applicable. Curriculum workers need to make a continuing analysis of research in various educational fields and related disciplines as a basis for keeping practice in harmony with what is known.

Research in the curriculum field should be focused on ways of bringing about improvement. Research is urgently needed in many areas that are of vital concern to teachers. Emphasis should be placed on involvement of teachers, both in using a research approach to the improvement of their work and in becoming more effective consumers of research.

Cooperative approaches to curriculum research seem fruitful in providing a variety of resources and in coordination of effort. The research process may be strengthened and new insights gleaned as a series of related studies are investigated and the findings brought together.

Curriculum workers need to refine and improve research techniques. New and creative approaches to evaluation are needed. The development of better instruments and procedures for collecting data is desirable.

Techniques for improving the research process in operation are also needed. The continuous appraisal of the process of problem identification, design, and execution will yield more effective results. The process of evaluation should continue throughout an inquiry.

Teachers and administrators need opportunities to review, analyze and interpret research findings for application in practice.

Research in curriculum is important, it is time consuming, it requires some additional resources, it requires leadership. The typical teacher needs time and support if his research is to yield maximum results.

Against this framework, we may try to highlight a few of our concerns in methodology. Perhaps we encounter more problems at the level of design and in the area of evaluation than elsewhere. It may be

[6] This presentation was made by Robert S. Fleming. What follows is drawn from his statement.

appropriate also to give some attention to the uniqueness of each research situation.

Problems of design. Design needs to be based on consistency in thinking through or theorizing about a problem. It seems essential to work out a clear-cut conception of all the relationships involved. Such an approach calls for a degree of sophistication in the understanding of research already available. Operationally, this means that the researcher must ask himself: What major assumptions am I making, and what bases do I have for making them? What do we already know? What factors give support to my planning?

It is expected that supplying ourselves with this kind of background may involve a search for interdisciplinary understandings. It certainly calls for putting our wealth of related knowledge into new and meaningful relationships. This, in part, was the logic behind the design of the Third ASCD Research Institute.

In underlining the need of this search for "old" or existing knowledge, we do not intend to suggest over-caution in planning. Progress is often made as novel, spectacular or frontier ideas are investigated. Yet in hypothesizing in a new area or with new relationships, what is proposed should certainly relate to existing data.

In our efforts to place meaningful problems in a research setting, the role of developmental design emerges. In some cases, a research design must be fixed and complete from the beginning; in others, it may develop as the investigator works.

Often a developmental approach is desirable. This calls for planning ahead, it is true, but for planning of a different kind. In no case does one "just start" without some clarification of beliefs, without some schedule of steps to be taken, or without some attention to a systematic plan of record keeping. As the design develops, it must have some degree of order, focus and consistency, although the nature of these may change along the way.

In summary, the design of any inquiry is seen as central to the process. Knowledge and theory should be joined in the evolution of a projected plan. Crucial features of design include a sharp, clear-cut statement of the problem; analysis of a problem into the basic components upon which a solution is dependent; the formulation of basic assumptions underlying the investigation; the formulation of hypotheses and projected solutions; the identification of types of data needed to test the hypotheses; the making of plans for data collection; and the development of procedures for analysis of the data.

Evaluation. The success or failure of a research project rests in large part on the ability of the persons involved to find or construct appropriate devices for collecting and assessing needed evidence. This aspect of research takes several forms.

First, data-collecting techniques are usually needed to establish some evidence as to the existence or appropriateness of a problem. Often evaluation techniques become the basis of problem identification. How does one become aware of a problem without evidence? How can one tell if what he thinks the problem is (his perception of it) can be supported unless he has evidence of its existence that can be shared with others?

Second, the accumulation of data is obviously essential in testing any hypothesis. These data may be drawn from many sources, including the following:

Test data of a "before" and "after" nature. These may be derived from standardized tests or instruments developed locally. The tests range in kind from achievement tests to tests that are intended to measure qualities of thinking, attitudes and interests.

Systematic observations. Observations must be kept according to agreement on intervals, conditions and the like. Training observers in order to provide similarity of reaction is also essential.

Planned interviews. Here, too, systematic training and planning are needed if the results are to be valid.

Collection of student work. A planned collection of samples of pupil work often provides useful data. These products must be analyzed according to consistent and specific criteria if the results are to be trustworthy. Types of such products are autobiographies, reports and art work.

Projective devices. The use of appropriate projective techniques—such as unfinished stories, incomplete sentences, themes, letters, pictures, and statements of wishes—provides opportunities for students to reveal their feelings, values and purposes. Such data, again, must be collected uniformly and analyzed carefully.

Inventories, logs, diaries. The systematic accumulation of such records provides "raw material" that is useful in certain kinds of studies.

Existing school records. Much raw data is often already available in the form of report cards, attendance records, reports of parent conferences and the like.

Special instruments. The needs of a given situation may call for the construction of new ways of getting at data. Teachers, for example, may develop a checklist or questionnaire aimed at collecting one specific kind of needed information.

Third, safeguards must be built into evaluation plans to provide for objectivity, validity and reliability. The researcher must ask himself such questions as these: Who is to collect the data? How can we check on the validity of data? Do all workers analyze the data the same way? Is there consistency in the plans for data collecting?

Finally, a plan must be provided for organizing and summarizing the collected data. Often an abundance of data remains unorganized and thus is wasted. Data must be analyzed before it can be reported. Exploring all the possible ways of establishing relationships among the data and of expressing these relationships graphically requires much thoughtful planning—and a great deal of hard work.

Situational factors. In the field of curriculum research, there are many aspects of any investigation that relate particularly to a given situation. These factors may include the local facilities of the school; its history and traditions; the specific experiences of the research group; the resources of the locality outside the school; the attitudes, aspirations and values of all the groups involved; and the nature and problems of school organization.

In combination, these factors make up the uniqueness of any particular research setting. The task of "sizing up" the working situation is exceedingly important in trying to plan for the best use of all the resources in it. Also, to the extent that we are working on similar problems in more than one situation or with more than one group in a particular setting, we need to know how they are alike and how they differ in order to analyze common factors in procedure and to look for common findings.

As procedures and findings agree, among differing situations, then we are able to begin making meaningful generalizations. Developing greater skill and precision in identifying and describing situational factors will doubtless help us all become more prudent and at the same time more assured in reporting our generalizations.

We should, in addition, become more proficient in helping the cooperative efforts of teachers in many different situations add up to something of broader significance to the profession.